SaniForce®
Equipment Catalog

Solutions for Sanitary Applications

unleash the
POWER

PROVEN QUALITY. LEADING TECHNOLOGY

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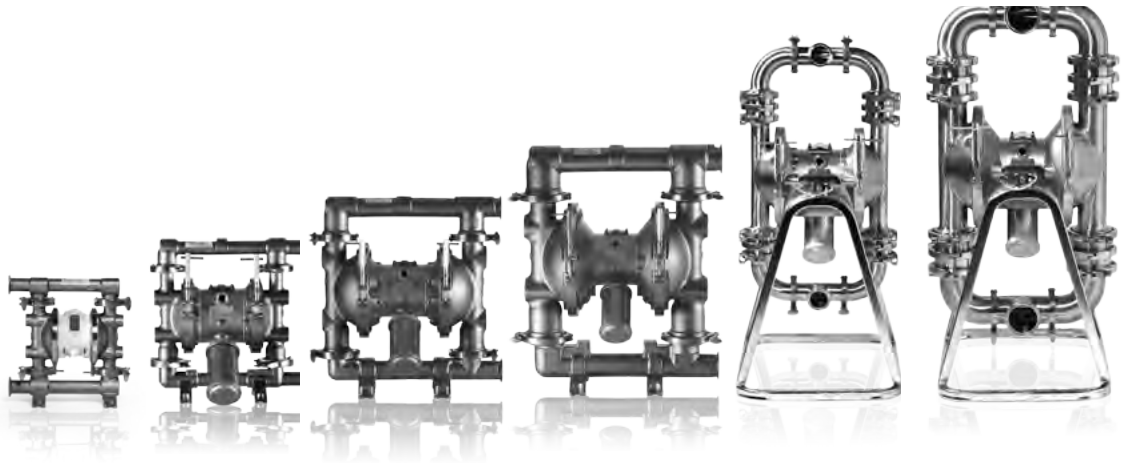
SaniForce® Pumps
Selection Chart

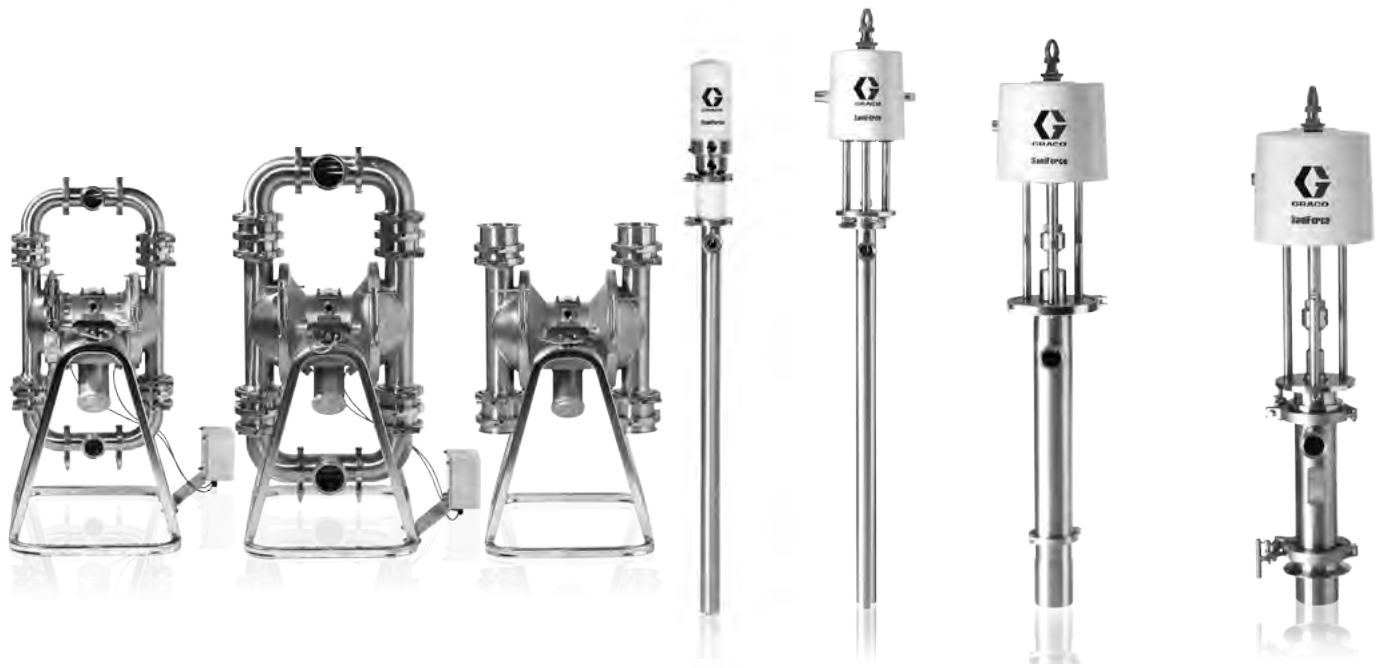
Model*	SaniForce 515	SaniForce 1040	SaniForce 1590	SaniForce 2150	SaniForce 1590 HS	SaniForce 3150 HS
Max Flow Rate	16 gpm (61 lpm)	40 gpm (151 lpm)	90 gpm (340 lpm)	150 gpm (568 lpm)	90 gpm (340 lpm)	150 gpm (568 lpm)
Max Fluid Pressure	100 psi (7 bar, 0.7 MPa)	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)
Check Style	Ball	Ball	Ball	Ball	Ball	Ball or Flapper
Suction Lift (Wet)	25 ft (7.6 m)	29 ft (8.84 m)	29 ft (8.84 m)	29 ft (8.84 m)	28 ft (8.5 m)	Ball = 18 ft (5.5 m) Flapper = 10 ft (3 m)
Max Pumpable Solids	3/32 in (2.38 mm)	1/8 in (3.2 mm)	3/16 in (4.8 mm)	1/4 in (6.3 mm)	5/8 in (15.9 mm)	Ball = 1 in (25.4 mm) Flapper = 2.5 in (63.5 mm)
Viscosity Range	Up to 10,000 cps	Up to 10,000 cps	Up to 15,000 cps	Up to 20,000 cps	Up to 15,000 cps	Up to 20,000 cps
Flyer	320462	320462	320462	320462	338499	338499
Instruction Manual	3A1973	311879	311879	311879	310622	310622

**Actual performance may vary by application*



	SaniForce 1590 3A	SaniForce 3150 3A	SaniForce Meat/Poultry	SaniForce 2:1 Piston Pump	SaniForce 6:1 Piston Pump	SaniForce 5:1 Piston Pump	SaniForce 12:1 Piston Pump
	90 gpm (340 lpm)	150 gpm (568 lpm)	150 gpm (568 lpm)	1.5 gpm (5.7 lpm)	4 gpm (15 lpm)	14 gpm (53 lpm)	8.5 gpm (32 lpm)
	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)	250 psi (17 bar, 1.7 MPa)	600 psi (41 bar, 4.1 MPa)	400 psi (28 bar, 2.8 MPa)	1200 psi (83 bar, 8.3 MPa)
	Ball	Ball	Flapper	Double ball	Double ball or Priming piston	Double ball or Priming piston	Priming piston
	28 ft (8.5 m)	18 ft (5.5 m)	10 ft (3 m)	N/A	N/A	N/A	N/A
	5/8 in (15.9 mm)	1 in (25.4 mm)	2.5 in (6.3 cm)	1/8 in (3.2 mm)	1/8 in (3.2 mm)	1/4 in (6.4 mm)	1/4 in (6.4 mm)
	Up to 15,000 cps	Up to 20,000 cps	Up to 20,000 cps	Up to 50,000 cps	Up to 100,000 cps	Up to 100,000 cps	Up to 1,000,000 cps**
	338499	338499	338067	338591	338591	338591	338591
	310622	310622	310622	3A2977	3A0733	3A0734	3A0735

***When mounted on drum unloader or bin evacuation system*

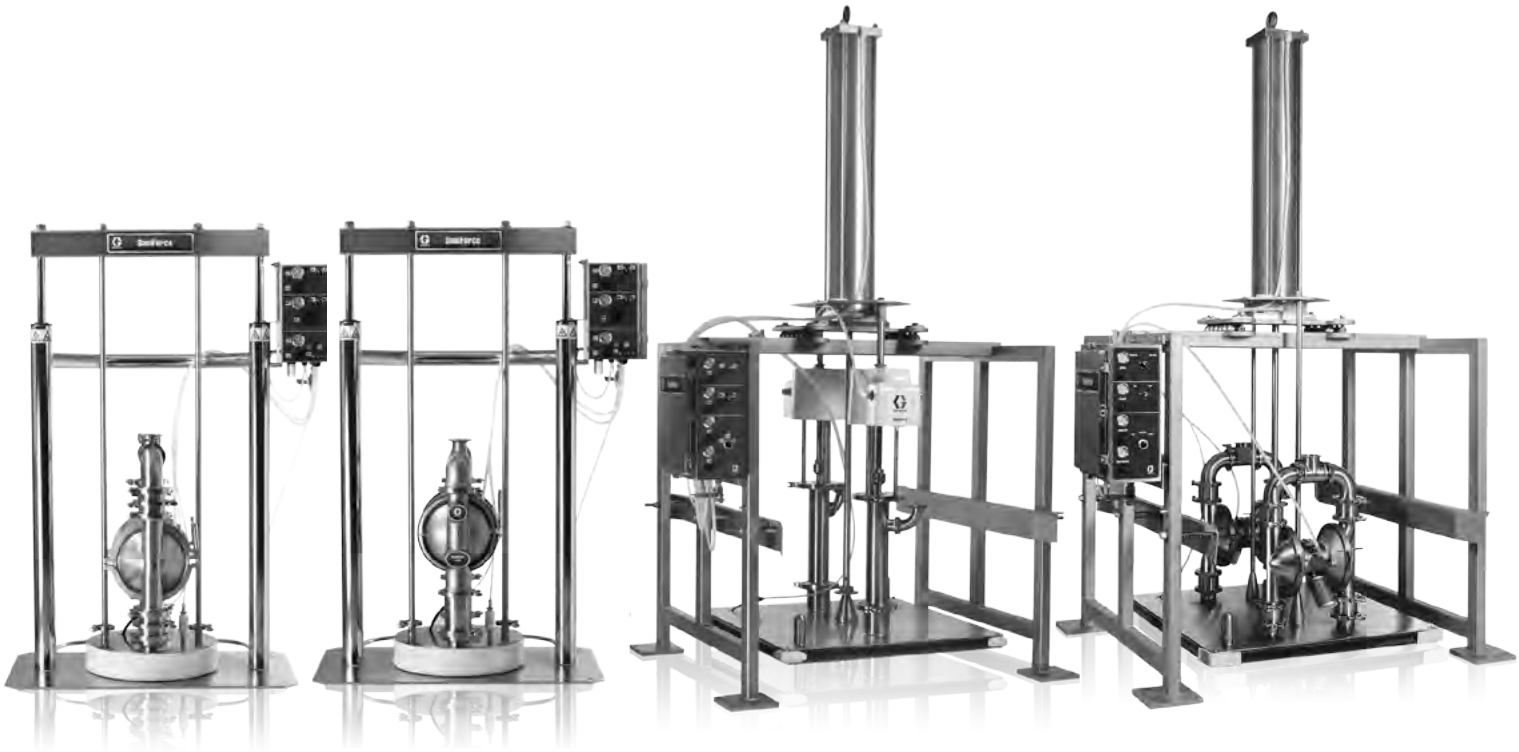


SaniForce Drum and Bin Unloaders
Selection Chart

Model*	Piston Pump Elevators	SaniForce 6:1 Drum Unloader	SaniForce 5:1 Drum Unloader	SaniForce 12:1 Drum Unloader
Max Flow Rate	Up to 14 gpm (53 lpm)	Up to 4.0 gpm (15 lpm)	Up to 14 gpm (53 lpm)	Up to 8.5 gpm (32 lpm)
Max Fluid Pressure	400 psi (28 bar, 2.8 MPa)	600 psi (41 bar, 4.1 MPa)	400 psi (28 bar, 2.8 MPa)	1200 psi (83 bar, 8.3 MPa)
Pump Style	Double ball	Double ball or priming piston	Double ball or priming piston	Priming piston
Controls	Manual	Manual	Manual	Manual
Viscosity Range				
Double Ball:	Up to 75,000 cps	Up to 75,000 cps	Up to 200,000 cps	
Priming Piston:		Up to 125,000 cps	+ 1,000,000 cps	+ 1,000,000 cps
Flyer	345058	338590	338590	338590
Instruction Manual	333406	3A0591	3A0591	3A0591

**Actual performance may vary by application*

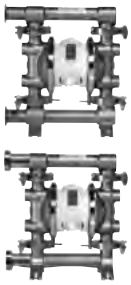
SaniForce 3150 HS Drum Unloader	SaniForce 2150 Drum Unloader	SaniForce BES	SaniForce 3150 BES
Up to 150 gpm (568 lpm)	Up to 150 gpm (568 lpm)	Up to 56 gpm (212 lpm)	Up to 300 gpm (1,135 lpm)
120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)	1200 psi (83 bar, 8.3 MPa)	120 psi (8 bar, 0.8 MPa)
Ball or flapper	Ball	Double ball or priming piston	Ball or flapper
Manual	Manual	Manual and Electronic	Manual and Electronic
Up to 100,000 cps	Up to 100,000 cps	+ 1,000,000 cps	Up to 100,000 cps
338590	338590	338589	338589
3A0591	3A0591	311163	311163



Ordering Information

SaniForce 515 - 1.0 in (25.4 mm) Sanitary Connection

Part Number	Manifold ID	Center Section	Seats	O-rings	Balls	Diaphragms	Connection
FD5111	0.96 in (24.3 mm)	Poly	SST	PTFE	PTFE	PTFE	Sanitary Clamp
FD5113	0.96 in (24.3 mm)	Poly	SST	PTFE	PTFE	Overmolded PTFE	Sanitary Clamp
FD5122	0.96 in (24.3 mm)	Poly	SST	PTFE	Santoprene	Santoprene	Sanitary Clamp
FD5611	0.96 in (24.3 mm)	Poly	SST	EPDM	PTFE	PTFE	Sanitary Clamp
FD5613	0.96 in (24.3 mm)	Poly	SST	EPDM	PTFE	Overmolded PTFE	Sanitary Clamp
FD5622	0.96 in (24.3 mm)	Poly	SST	EPDM	Santoprene	Santoprene	Sanitary Clamp
FD6111	0.96 in (24.3 mm)	Poly	SST	PTFE	PTFE	PTFE	DIN
FD6113	0.96 in (24.3 mm)	Poly	SST	PTFE	PTFE	Overmolded	DIN



SaniForce 1040 - 1.5 in (38.1 mm) Sanitary Connection

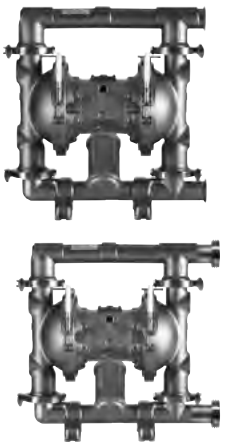
Part Number	Manifold ID	Center Section	Seats	O-rings	Balls	Diaphragms	Connections
FD1111	1.0 in (25.4 mm)	SST	SST	PTFE	PTFE	PTFE	Sanitary Clamp
FD1122	1.0 in (25.4 mm)	SST	SST	PTFE	Santoprene	Santoprene	Sanitary Clamp
FD1211	1.0 in (25.4 mm)	SST	SST	EPDM	PTFE	PTFE	Sanitary Clamp
FD1222	1.0 in (25.4 mm)	SST	SST	EPDM	Santoprene	Santoprene	Sanitary Clamp
FD1113	1.0 in (25.4 mm)	SST	SST	PTFE	PTFE	Overmolded PTFE	Sanitary Clamp
FD1213	1.0 in (25.4 mm)	SST	SST	EPDM	PTFE	Overmolded PTFE	Sanitary Clamp
FD1132	1.0 in (25.4 mm)	SST	SST	PTFE	Weighted CR	Santoprene	Sanitary Clamp
FD1133	1.0 in (25.4 mm)	SST	SST	PTFE	Weighted CR	Overmolded PTFE	Sanitary Clamp
FD1232	1.0 in (25.4 mm)	SST	SST	EPDM	Weighted CR	Santoprene	Sanitary Clamp
FA1111*	1.0 in (25.4 mm)	AL	SST	PTFE	PTFE	PTFE	Sanitary Clamp
FA1122*	1.0 in (25.4 mm)	AL	SST	PTFE	Santoprene	Santoprene	Sanitary Clamp
FA1132*	1.0 in (25.4 mm)	AL	SST	PTFE	Weighted CR	Santoprene	Sanitary Clamp
FA1133*	1.0 in (25.4 mm)	AL	SST	PTFE	Weighted CR	Overmolded PTFE	Sanitary Clamp
FA1222*	1.0 in (25.4 mm)	AL	SST	EPDM	Santoprene	Santoprene	Sanitary Clamp
FD7111	1.0 in (25.4 mm)	SST	SST	PTFE	PTFE	PTFE	DIN
FA7111*	1.0 in (25.4 mm)	SST	SST	PTFE	PTFE	PTFE	DIN
FA1231**	1.0 in (25.4 mm)	AL	SST	EPDM	Weighted CR	PTFE	Sanitary Clamp
FA1232**	1.0 in (25.4 mm)	AL	SST	EPDM	Weighted CR	Santoprene	Sanitary Clamp
FA1233**	1.0 in (25.4 mm)	AL	SST	EPDM	Weighted CR	Overmolded PTFE	Sanitary Clamp

**SaniForce Pump with Aluminum Center Section (aluminum air motor and 316 SST fluid section)*
***Tested with water, not vegetable oil*

Ordering Information

SaniForce 1590 - 2.0 in (50.8 mm) Sanitary Connection

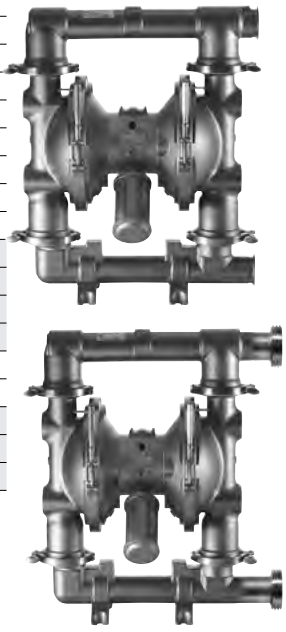
Part Number	Manifold ID	Center Section	Seats	O-rings	Balls	Diaphragms	Connections
FD2111	1.5 in (38.1 mm)	SST	SST	PTFE	PTFE	PTFE	Sanitary Clamp
FD2122	1.5 in (38.1 mm)	SST	SST	PTFE	Santoprene	Santoprene	Sanitary Clamp
FD2211	1.5 in (38.1 mm)	SST	SST	EPDM	PTFE	PTFE	Sanitary Clamp
FD2222	1.5 in (38.1 mm)	SST	SST	EPDM	Santoprene	Santoprene	Sanitary Clamp
FD2113	1.5 in (38.1 mm)	SST	SST	PTFE	PTFE	Overmolded PTFE	Sanitary Clamp
FD2213	1.5 in (38.1 mm)	SST	SST	EPDM	PTFE	Overmolded PTFE	Sanitary Clamp
FD2132	1.5 in (38.1 mm)	SST	SST	PTFE	Weighted CR	Santoprene	Sanitary Clamp
FD2133	1.5 in (38.1 mm)	SST	SST	PTFE	Weighted CR	Overmolded PTFE	Sanitary Clamp
FD2232	1.5 in (38.1 mm)	SST	SST	EPDM	Weighted CR	Santoprene	Sanitary Clamp
FA2111*	1.5 in (38.1 mm)	AL	SST	PTFE	PTFE	PTFE	Sanitary Clamp
FA2122*	1.5 in (38.1 mm)	AL	SST	PTFE	Santoprene	Santoprene	Sanitary Clamp
FA2132*	1.5 in (38.1 mm)	AL	SST	PTFE	Weighted CR	Santoprene	Sanitary Clamp
FA2222*	1.5 in (38.1 mm)	AL	SST	EPDM	Santoprene	Santoprene	Sanitary Clamp
FD8111	1.5 in (38.1 mm)	SST	SST	PTFE	PTFE	PTFE	DIN
FA8111*	1.5 in (38.1 mm)	SST	SST	PTFE	PTFE	PTFE	DIN
FA2231**	1.5 in (38.1 mm)	AL	SST	EPDM	Weighted CR	PTFE	Sanitary Clamp
FA2232**	1.5 in (38.1 mm)	AL	SST	EPDM	Weighted CR	Santoprene	Sanitary Clamp
FA2233**	1.5 in (38.1 mm)	AL	SST	EPDM	Weighted CR	Overmolded PTFE	Sanitary Clamp



SaniForce 2150 - 2.5 in (63.5 mm) Sanitary Connection

Part Number	Manifold ID	Center Section	Seats	O-rings	Balls	Diaphragms	Connection
FD3111	2.0 in (50.8 mm)	SST	SST	PTFE	PTFE	PTFE	Sanitary Clamp
FD3122	2.0 in (50.8 mm)	SST	SST	PTFE	Santoprene	Santoprene	Sanitary Clamp
FD3211	2.0 in (50.8 mm)	SST	SST	EPDM	PTFE	PTFE	Sanitary Clamp
FD3222	2.0 in (50.8 mm)	SST	SST	EPDM	Santoprene	Santoprene	Sanitary Clamp
FD3113	2.0 in (50.8 mm)	SST	SST	PTFE	PTFE	Overmolded PTFE	Sanitary Clamp
FD3213	2.0 in (50.8 mm)	SST	SST	EPDM	PTFE	Overmolded PTFE	Sanitary Clamp
FD3132	2.0 in (50.8 mm)	SST	SST	PTFE	Weighted CR	Santoprene	Sanitary Clamp
FD3133	2.0 in (50.8 mm)	SST	SST	PTFE	Weighted CR	Overmolded PTFE	Sanitary Clamp
FD3232	2.0 in (50.8 mm)	SST	SST	EPDM	Weighted CR	Santoprene	Sanitary Clamp
FA3111*	2.0 in (50.8 mm)	AL	SST	PTFE	PTFE	PTFE	Sanitary Clamp
FA3122*	2.0 in (50.8 mm)	AL	SST	PTFE	Santoprene	Santoprene	Sanitary Clamp
FA3132*	2.0 in (50.8 mm)	AL	SST	PTFE	Weighted CR	Santoprene	Sanitary Clamp
FA3222*	2.0 in (50.8 mm)	AL	SST	EPDM	Santoprene	Santoprene	Sanitary Clamp
FD9111	2.0 in (50.8 mm)	SST	SST	PTFE	PTFE	PTFE	DIN
FA9111*	2.0 in (50.8 mm)	AL	SST	PTFE	PTFE	PTFE	DIN
FA3231**	2.0 in (50.8 mm)	AL	SST	EPDM	Weighted CR	PTFE	Sanitary Clamp
FA3232**	2.0 in (50.8 mm)	AL	SST	EPDM	Weighted CR	Santoprene	Sanitary Clamp
FA3233**	2.0 in (50.8 mm)	AL	SST	EPDM	Weighted CR	Overmolded PTFE	Sanitary Clamp

**SaniForce Pump with Aluminum Center Section (aluminum air motor and 316 SST fluid section)*
***Tested with water, not vegetable oil*



SaniForce 515, 1040, 1590 & 2150

Fluid Repair Kits

515 Kits	O-rings	Balls	Diaphragms
FK5111	PTFE	PTFE	PTFE
FK5113	PTFE	PTFE	Overmolded PTFE
FK5122	PTFE	Santoprene	Santoprene
FK5611	EPDM	PTFE	PTFE
FK5613	EPDM	PTFE	Overmolded PTFE
FK5622	EPDM	Santoprene	Santoprene
110954	PTFE	–	–

1590 Kits	O-rings	Balls	Diaphragms
FK2111	PTFE	PTFE	PTFE
FK2122	PTFE	Santoprene	Santoprene
FK2133	PTFE	Weighted CR	Overmolded PTFE
FK2211	EPDM	PTFE	PTFE
FK2222	EPDM	Santoprene	Santoprene
FK2113	PTFE	PTFE	Overmolded PTFE
FK2213	EPDM	PTFE	Overmolded PTFE
FK2132	PTFE	Weighted CR	Santoprene
FK2232	EPDM	Weighted CR	Santoprene
253627	–	–	Overmolded PTFE

1040 Kits	O-rings	Balls	Diaphragms
FK1111	PTFE	PTFE	PTFE
FK1122	PTFE	Santoprene	Santoprene
FK1133	PTFE	Weighted CR	Overmolded PTFE
FK1211	EPDM	PTFE	PTFE
FK1222	EPDM	Santoprene	Santoprene
FK1113	PTFE	PTFE	Overmolded PTFE
FK1213	EPDM	PTFE	Overmolded PTFE
FK1132	PTFE	Weighted CR	Santoprene
FK1232	EPDM	Weighted CR	Santoprene
253626	–	–	Overmolded PTFE

2150 Kits	O-rings	Balls	Diaphragms
FK3111	PTFE	PTFE	PTFE
FK3122	PTFE	Santoprene	Santoprene
FK3133	PTFE	Weighted CR	Overmolded PTFE
FK3211	EPDM	PTFE	PTFE
FK3222	EPDM	Santoprene	Santoprene
FK3113	PTFE	PTFE	Overmolded PTFE
FK3213	EPDM	PTFE	Overmolded PTFE
FK3132	PTFE	Weighted CR	Santoprene
FK3232	EPDM	Weighted CR	Santoprene
253628	–	–	Overmolded PTFE

Technical Specifications

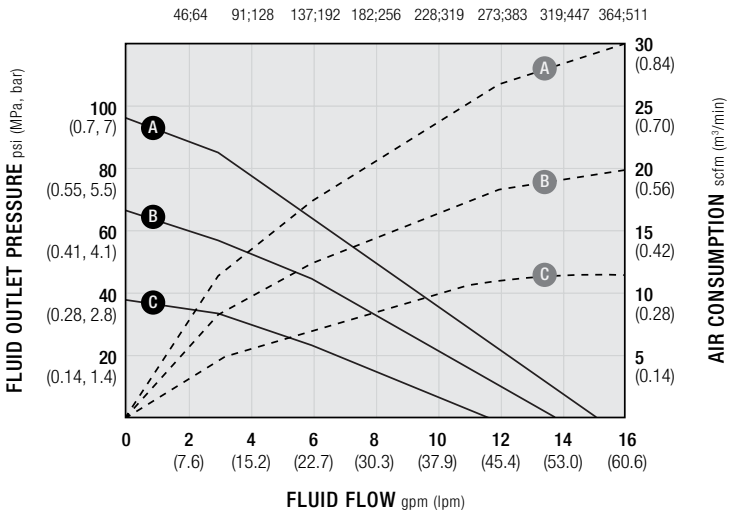
	515 FDA	1040 FDA	1590 FDA	2150 FDA
Max. fluid working pressure	100 psi (7 bar, 0.7 MPa)	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)
Air pressure operating range	20-100 psi (1.4-7 bar, 0.14-0.7 MPa)	20-120 psi (1.4-8 bar, 0.14-0.8 MPa)	20–120 psi (1.4–8 bar, 0.14 –0.8 MPa)	20–120 psi (1.4–8 bar, 0.14 –0.8 MPa)
Max. air consumption	28 scfm	50 scfm	130 scfm	175 scfm
Air consumption	N/A	18 scfm at 70 psi/20 gpm	42 scfm at 70 psi/50 gpm	70 scfm at 70 psi/80 gpm
Max. free-flow delivery	16 gpm (61 lpm)	40 gpm (151 lpm)	90 gpm (340 lpm)	150 gpm (568 lpm)
Gallons (liters) per cycle	0.04 (0.15) - standard diaphragms 0.03 (0.11) - overmolded diaphragms	0.16 (0.57)*	0.5 (1.9)*	0.97 (3.67)*
Max. suction lift	25 ft. (7.6 m) wet, 15 ft (4.6 m) dry	29 ft (8.83 m) wet, 16 ft (4.87 m) dry	29 ft (8.83 m) wet, 14 ft (4.27 m) dry	29 ft (8.83 m) wet, 16 ft (4.87 m) dry
Max. size pumpable solids	3/32 in (2.38 mm)	1/8 in (3.2 mm)	3/16 in (4.8 mm)	1/4 in (6.3 mm)
Air inlet size	1/4 npt(f)	0.5 in npt(f)	0.5 in npt(f)	0.5 in npt(f)
Fluid inlet/outlet size	1.0 in (25.4 mm) sanitary flange	1.5 in (38.1 mm) sanitary flange	2 in (50.8 mm) sanitary flange	2.5 in (63.5 mm) sanitary flange
Weight FDXXXX models FAXXXX models	 22.6 lb (10.25 kg) N/A	 55 lb (24.9 kg) 49 lb (22.2 kg)	 89 lb (40 kg) 83 lb (37.6 kg)	 147 lb (66.7 kg) 141 lb (63.9 kg)
Flyer	320462	320462	320462	320462
Instruction manual	3A1973	311879	311879	311879

Maximum fluid operating temperature is based on the following maximum diaphragm, ball, and seat temperature ratings				
Stainless steel	250°F (121.1°C)	250°F (121.1°C)	250°F (121.1°C)	250°F (121.1°C)
PTFE	220°F (104.4°C)	220°F (104.4°C)	220°F (104.4°C)	220°F (104.4°C)
Santoprene	180°F (82.2°C)	180°F (82.2°C)	180°F (82.2°C)	180°F (82.2°C)
EPDM	275°F (135°C)	275°F (135°C)	275°F (135°C)	275°F (135°C)
Polychloroprene	N/A	200°F (93.3°C)	200°F (93.3°C)	200°F (93.3°C)

**Displacement per cycle may vary based on suction condition, discharge head, air pressure and fluid type*

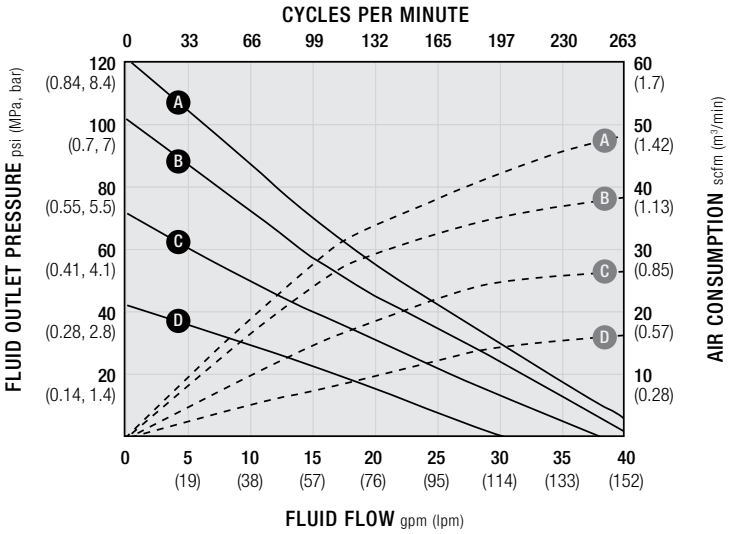
Performance Charts

515 Performance



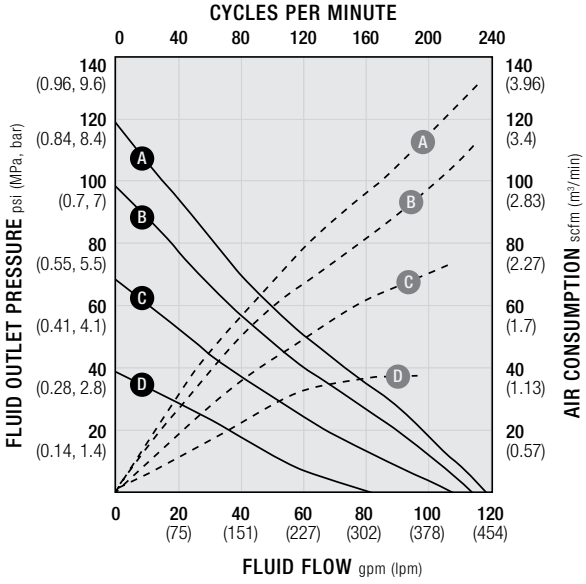
AIR PRESSURE	LEGEND
(A) = at 100 psi (7 bar, 0.7 MPa)	Air Consumption - - - - -
(B) = at 70 psi (4.8 bar, 0.5 MPa)	Fluid Flow ———
(C) = at 40 psi (2.8 bar, 0.3 MPa)	

1040 Performance



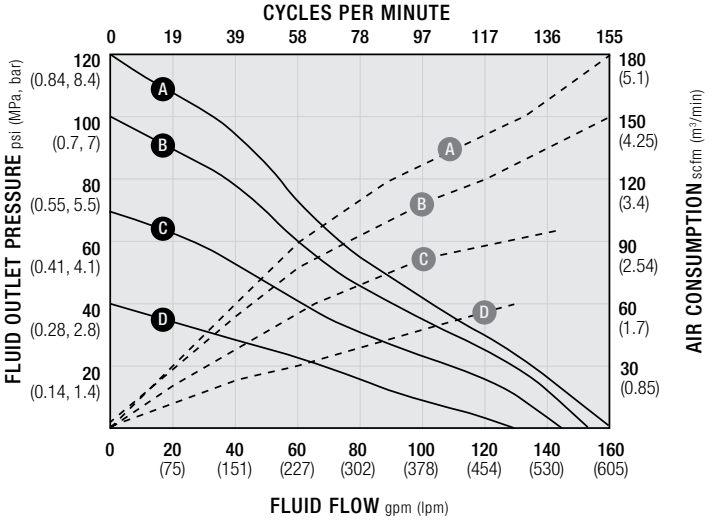
AIR PRESSURE	LEGEND
(A) = at 120 psi (8.4 bar, 0.84 MPa)	Air Consumption - - - - -
(B) = at 100 psi (7 bar, 0.7 MPa)	Fluid Flow ———
(C) = at 70 psi (4.8 bar, 0.5 MPa)	
(D) = at 40 psi (2.8 bar, 0.3 MPa)	

1590 Performance



AIR PRESSURE	LEGEND
(A) = at 120 psi (8.4 bar, 0.84 MPa)	Air Consumption - - - - -
(B) = at 100 psi (7 bar, 0.7 MPa)	Fluid Flow ———
(C) = at 70 psi (4.8 bar, 0.5 MPa)	
(D) = at 40 psi (2.8 bar, 0.3 MPa)	

2150 Performance

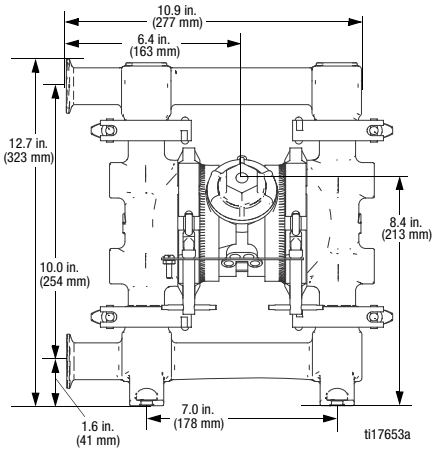


AIR PRESSURE	LEGEND
(A) = at 120 psi (8.4 bar, 0.84 MPa)	Air Consumption - - - - -
(B) = at 100 psi (7 bar, 0.7 MPa)	Fluid Flow ———
(C) = at 70 psi (4.8 bar, 0.5 MPa)	
(D) = at 40 psi (2.8 bar, 0.3 MPa)	

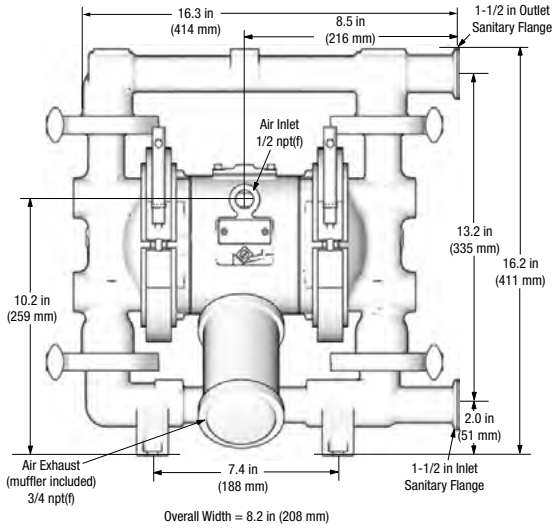
SaniForce 515, 1040, 1590 & 2150

Dimensions

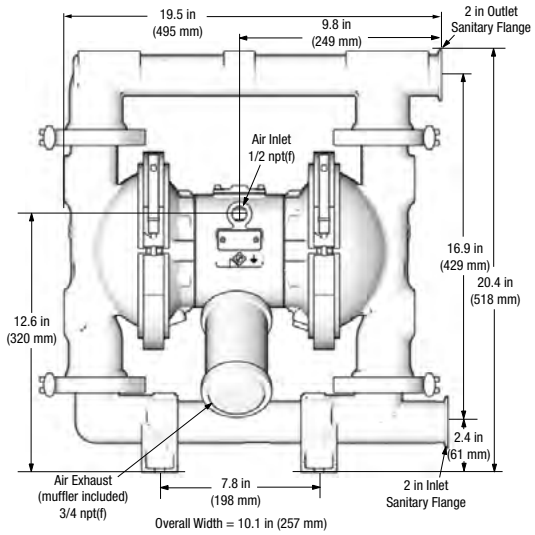
SaniForce 515



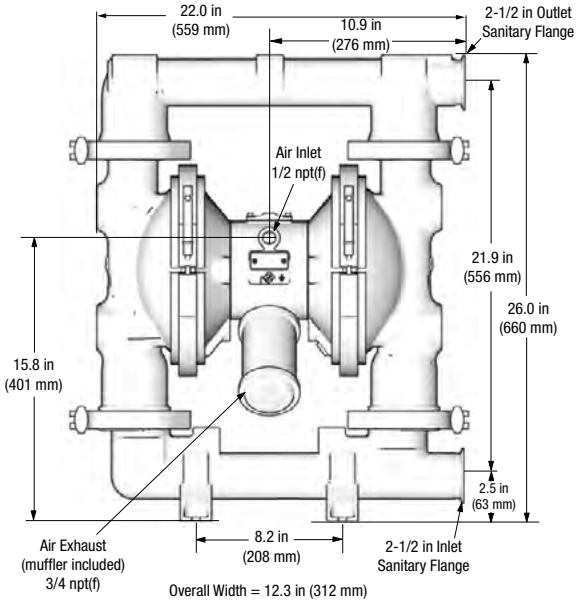
SaniForce 1040



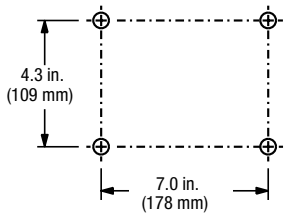
SaniForce 1590



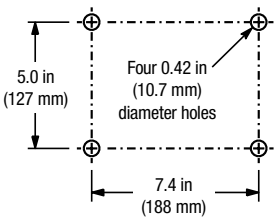
SaniForce 2150



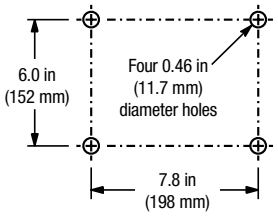
SaniForce 515 Mounting Hole Pattern



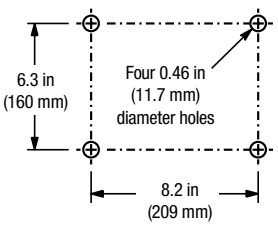
SaniForce 1040 Mounting Hole Pattern



SaniForce 1590 Mounting Hole Pattern



SaniForce 2150 Mounting Hole Pattern



Ordering Information

SaniForce 1590 HS Ball Pumps

Part Number	Type	Manifold ID	Sanitary Connection	Diaphragm	Ball Material	
SBBAAA	Ball	1.9 in (48.3 mm)	2 in x 2 in	Overmolded EPDM	PTFE	
SBBA11	Ball	1.9 in (48.3 mm)	2 in x 2 in	PTFE	PTFE	
SABA13	Ball	1.9 in (48.3 mm)	2 in x 2 in	Overmolded PTFE	PTFE	Includes leak detector
SBBA13	Ball	1.9 in (48.3 mm)	2 in x 2 in	Overmolded PTFE	PTFE	
SBBA22	Ball	1.9 in (48.3 mm)	2 in x 2 in	Santoprene	Santoprene	
SADAAA	Ball	1.9 in (48.3 mm)	DIN Connection	Overmolded EPDM	PTFE	
SBDAAA	Ball	1.9 in (48.3 mm)	DIN Connection	Overmolded EPDM	PTFE	

SaniForce 1590 Kits and Accessories

Part Number	Type
255058	Overmolded EPDM diaphragm kit
255059	Santoprene diaphragm kit
255060	PTFE diaphragm kit
253627	PTFE overmolded diaphragm kit

Part Number	Type
112421	Santoprene ball (quantity one)
112419	PTFE ball (quantity one)
255122	Air valve repair kit 3A
15D990	Leak detector

SaniForce 3150 HS Ball Pumps

Part Number	Type	Manifold ID	Sanitary Connection	Diaphragm	Ball Material
SA13A1	Ball	2.9 in (73.7 mm)	1.5 in x 1.5 in	Overmolded PTFE/EPDM	PTFE
SA23A1	Ball	2.9 in (73.7 mm)	2 in x 2 in	Overmolded PTFE/EPDM	PTFE
SA33A1	Ball	2.9 in (73.7 mm)	3 in x 3 in	Overmolded PTFE/EPDM	PTFE
SA43A1	Ball	2.9 in (73.7 mm)	4 in x 4 in	Overmolded PTFE/EPDM	PTFE
SA53A1	Ball	2.9 in (73.7 mm)	3 in x 2 in	Overmolded PTFE/EPDM	PTFE
SA3361	Ball	2.9 in (73.7 mm)	3 in x 3 in	Overmolded PTFE/EPDM	Santoprene
SB2AA1	Ball	2.9 in (73.7 mm)	2 in x 2 in	Overmolded EPDM	PTFE
SB3AA1	Ball	2.9 in (73.7 mm)	3 in x 3 in	Overmolded EPDM	PTFE
SB2661	Ball	2.9 in (73.7 mm)	2 in x 2 in	Santoprene	Santoprene
SB3661	Ball	2.9 in (73.7 mm)	3 in x 3 in	Santoprene	Santoprene
SB2771	Ball	2.9 in (73.7 mm)	2 in x 2 in	Buna-N	Buna-N
SB3771	Ball	2.9 in (73.7 mm)	3 in x 3 in	Buna-N	Buna-N
SB2881	Ball	2.9 in (73.7 mm)	2 in x 2 in	Fluoroelastomer	Fluoroelastomer
SB3881	Ball	2.9 in (73.7 mm)	3 in x 3 in	Fluoroelastomer	Fluoroelastomer
SA6AAA	Ball	2.9 in (73.7 mm)	DIN Connection	Overmolded EPDM	PTFE
SA73A1	Ball	2.9 in (73.7 mm)	DIN Connection	Overmolded PTFE/EPDM	PTFE
SA7AAA	Ball	2.9 in (73.7 mm)	DIN Connection	Overmolded EPDM	PTFE

SaniForce 3150 HS Flapper Pumps

Part Number	Type	Manifold ID	Sanitary Connection	Diaphragm Material
SF3AF1	Flapper	2.9 in (73.7 mm)	3 in x 3 in	Overmolded EPDM
SF4AF1	Flapper	2.9 in (73.7 mm)	4 in x 4 in	Overmolded EPDM
SF36F1	Flapper	2.9 in (73.7 mm)	3 in x 3 in	Santoprene
SF46F1	Flapper	2.9 in (73.7 mm)	4 in x 4 in	Santoprene
SF37F1	Flapper	2.9 in (73.7 mm)	3 in x 3 in	Buna-N
SF47F1	Flapper	2.9 in (73.7 mm)	4 in x 4 in	Buna-N
SF38F1	Flapper	2.9 in (73.7 mm)	3 in x 3 in	Fluoroelastomer
SF48F1	Flapper	2.9 in (73.7 mm)	4 in x 4 in	Fluoroelastomer
SF7AF1	Flapper	2.9 in (73.7 mm)	DIN Connection	Overmolded EPDM
SF8AF1	Flapper	2.9 in (73.7 mm)	DIN Connection	Overmolded EPDM

Flapper Check Valve

Ball Check Valve

Ordering Information

SaniForce 3150 HS Accessories

Part Number	Type
16E975	Conversion kit: Ball to flapper, includes four flapper assemblies
15H461	3A Conversion kit: Flapper to ball, includes four housing retainers (balls need to be ordered separately)
15E285	Conversion kit: Flapper to ball, includes four housing retainers (balls need to be ordered separately)
112359	PTFE ball (order quantity four)
112361	Santoprene ball (order quantity four)
253225	Santoprene diaphragm kit
15B492	Buna-N ball (order quantity four)
253223	Buna-N diaphragm kit
15B491	Fluoroelastomer ball (order quantity four)
253222	Fluoroelastomer diaphragm kit
253224	Overmolded EPDM diaphragm kit
253628	Overmolded PTFE diaphragm kit
15D990	Leak detector kit

Technical Specifications

1590	
Maximum fluid working pressure	120 psi (8 bar, 0.8 MPa)
Maximum free-flow delivery	90 gpm (340 lpm)
Maximum suction lift	28 ft (8.5 m) wet, 15 ft (4.57 m) dry
Maximum size pumpable solids	5/8 in (15.9 mm)
Air pressure operating range	20-120 psi (14-8 bar, 014-08 MPa)
Maximum air consumption	125 scfm
Air consumption at 70 psi air inlet pressure/60 gpm	50 scfm
Maximum pump speed	200 cpm
*Gallons (liters) per cycle	0.5 (1.96)
**Maximum noise level at 100 psi, full flow	90 dBa
**Sound power level	103 dBa
**Noise level at 70 psi and 50 cpm	85 dBa
Air inlet size	0.5 in npt(f)
Weight	97 lb (44 kg)
Flyer	338499
Instruction manual	310622

Maximum fluid operating temperature is based on the following maximum diaphragm, ball, and seat temperature ratings	
PTFE (Overmolded diaphragm)	180°F (82.2°C)
PTFE (2-piece diaphragm)	220°F (104.4°C)
Santoprene	180°F (82.2°C)
3A Approved EPDM	275°F (135°C)

** Displacement per cycle may vary based on suction condition, discharge head, air pressure and fluid type*

***Noise levels measured with the pump mounted on the stand. Sound power measured per ISO Standard 9614-1*

3150	
Maximum fluid working pressure	120 psi (8 bar, 0.8 MPa)
Maximum free-flow delivery*	150 gpm (568 lpm)
Maximum suction lift - ball	18 ft (5.4 m) wet, 9 ft (2.7 m) dry
Maximum suction lift - flapper	10 ft (3.0 m) wet, 5 ft (1.5 m) dry
Maximum size pumpable solids - ball	1 in (25.4 mm)
Maximum size pumpable solids - flapper	2.5 in (63.5 mm)
Air pressure operating range	20-120 psi (1.4 to 8.4 bar, 0.14 to 0.84 MPa)
Maximum air consumption	175 scfm
Air consumption at 70 psi air inlet pressure/60 gpm	50 scfm
Maximum pump speed	145 cpm
*Gallons (liter) per cycle	1.03 (3.90)
**Maximum noise level at 100 psi, full flow	90 dBa
**Sound power level	103 dBa
**Noise level at 70 psi and 50 cpm	85 dBa
Fluid inlet & outlet size (determined by part number)	Tri-clamp connections
Air inlet size	0.5 in npt(f)
Weight	145 lb (65 kg)
Flyer	338499
Instruction manual	310622

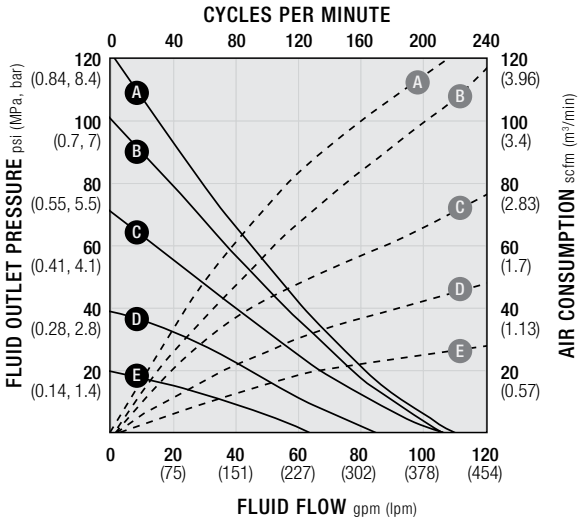
Maximum diaphragm operating temperature	
Santoprene	180ºF (82.2ºC)
Buna-N	180ºF (82.2ºC)
PTFE (Overmolded diaphragm)	180ºF (82.2ºC)
Fluoroelastomer	250ºF (121ºC)
3A Approved EPDM	275ºF (135ºC)

** Displacement per cycle may vary based on suction condition, discharge head, air pressure and fluid type*

***Noise levels measured with the pump mounted on the stand. Sound power measured per ISO Standard 9614-1*

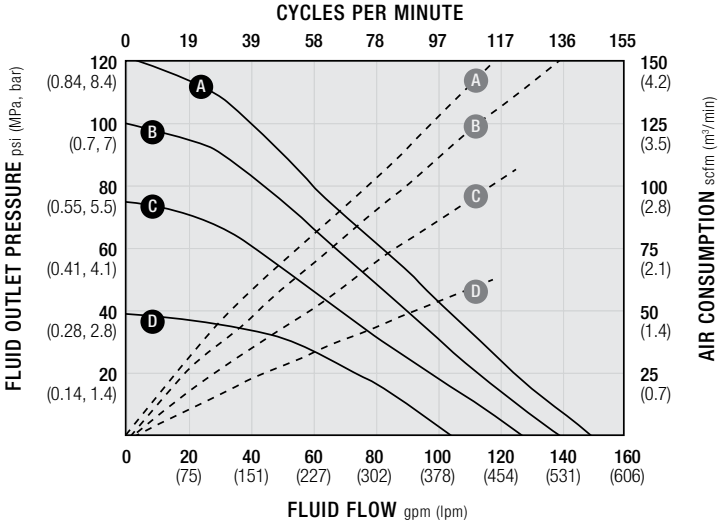
Performance Charts

1590 High Sanitation Performance



AIR PRESSURE	LEGEND
(A) = at 120 psi (8.4 bar, 0.84 MPa)	Air Consumption - - - - -
(B) = at 100 psi (7 bar, 0.7 MPa)	Fluid Flow ———
(C) = at 70 psi (4.8 bar, 0.5 MPa)	
(D) = at 40 psi (2.8 bar, 0.3 MPa)	
(E) = at 20 psi (1.4 bar, 0.14 MPa)	

3150 High Sanitation Performance

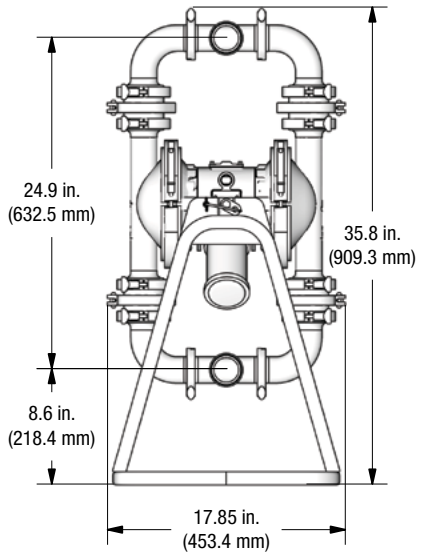


AIR PRESSURE	LEGEND
(A) = at 120 psi (8.4 bar, 0.84 MPa)	Air Consumption - - - - -
(B) = at 100 psi (7 bar, 0.7 MPa)	Fluid Flow ———
(C) = at 70 psi (4.8 bar, 0.5 MPa)	
(D) = at 40 psi (2.8 bar, 0.3 MPa)	

Dimensions

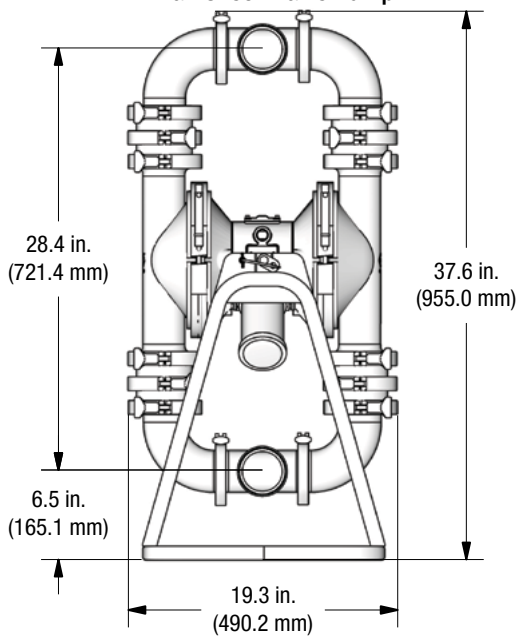
SaniForce 1590 HS

Ball Check Valve Pump



SaniForce 3150 HS

Ball Check Valve Pump



Ordering Information

SaniForce 1590 3A Pumps

3A Pump with Leak Detector

Part Number	Type	Manifold ID	Sanitary Connection	Diaphragm	Ball
SABAAA	Ball	1.9 in (48.3 mm)	2 in x 2 in	Overmolded EPDM	PTFE

SaniForce 3150 3A Pumps

3A Pump with Leak Detector

Part Number	Type	Manifold ID	Sanitary Connection	Diaphragm	Ball
SA1AAA	Ball	2.9 in (73.7 mm)	1.5 in x 1.5 in	Overmolded EPDM	PTFE
SA2AAA	Ball	2.9 in (73.7 mm)	2 in x 2 in	Overmolded EPDM	PTFE
SA3AAA	Ball	2.9 in (73.7 mm)	3 in x 3 in	Overmolded EPDM	PTFE
SA4AAA	Ball	2.9 in (73.7 mm)	4 in x 4 in	Overmolded EPDM	PTFE
SA5AAA	Ball	2.9 in (73.7 mm)	3 in x 2 in	Overmolded EPDM	PTFE

3A High Sanitation Overmolded EPDM Diaphragm Kit

Part No.	Description
255058	For 1.5 inch pump size, diaphragm repair kit
253224	For 2 inch pump size, diaphragm repair kit

Technical Specifications

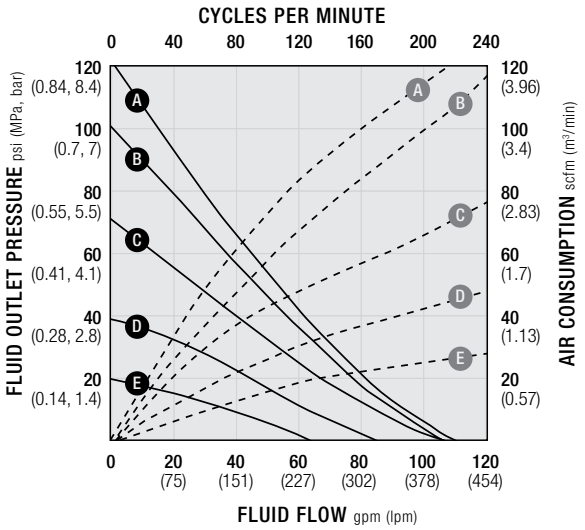
	1590 3A Certified	3150 3A Certified
Maximum fluid working pressure	120 psi (8 bar, 0.8 MPa)	120 psi (8 bar, 0.8 MPa)
Maximum free-flow delivery**	90 gpm (340 lpm)	150 gpm (568 lpm)
Maximum suction lift - ball	28 ft (8.5 m) wet, 15 ft (4.5 m) dry	18 ft (5.5 m) wet, 9 ft (2.7 m) dry
Maximum size pumpable solids - ball	5/8 in (15.8 mm)	1 in (25.4 mm)
Typical sound level at 70 psi air (4.9 bar) air @ 50 cpm	85 dBa	85 dBa
Air pressure operating range	20-120 psi (1.4 to 8.4 bar, 0.14 to 0.84 MPa)	20-120 psi (1.4 to 8.4 bar, 0.14 to 0.84 MPa)
Air inlet size	0.5 in npt(f)	0.5 in npt(f)
Fluid inlet & outlet size (determined by part number)	Tri-clamp connections	Tri-clamp connections
Weight	97 lb (44 kg)	145 lb (65 kg)
Flyer	338499	338499
Instruction manual	310622	310622

Maximum diaphragm operating temperature		
3A Approved EPDM	275ºF (135ºC)	275ºF (135ºC)

*** Flow rates are with muffler and do not vary based on diaphragm material. Displacement per cycle may vary based on suction condition, discharge head, air pressure and fluid type.*

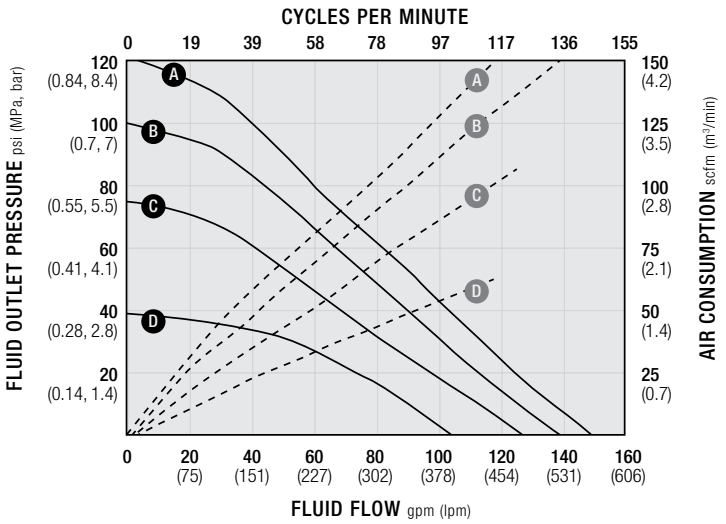
Performance Charts

1590 3A Performance



AIR PRESSURE	LEGEND
(A) = at 120 psi (8.4 bar, 0.84 MPa)	Air Consumption - - - - -
(B) = at 100 psi (7 bar, 0.7 MPa)	Fluid Flow ———
(C) = at 70 psi (4.8 bar, 0.5 MPa)	
(D) = at 40 psi (2.8 bar, 0.3 MPa)	
(E) = at 20 psi (1.4 bar, 0.14 MPa)	

3150 3A Performance

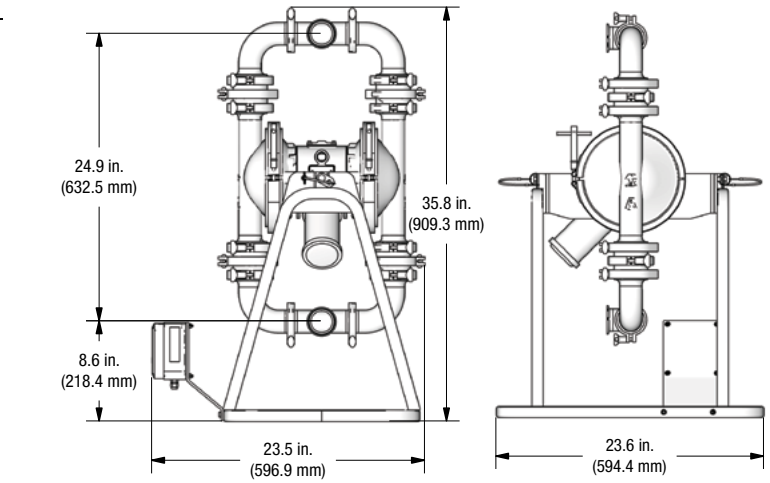


AIR PRESSURE	LEGEND
(A) = at 120 psi (8.4 bar, 0.84 MPa)	Air Consumption - - - - -
(B) = at 100 psi (7 bar, 0.7 MPa)	Fluid Flow ———
(C) = at 70 psi (4.8 bar, 0.5 MPa)	
(D) = at 40 psi (2.8 bar, 0.3 MPa)	

Dimensions

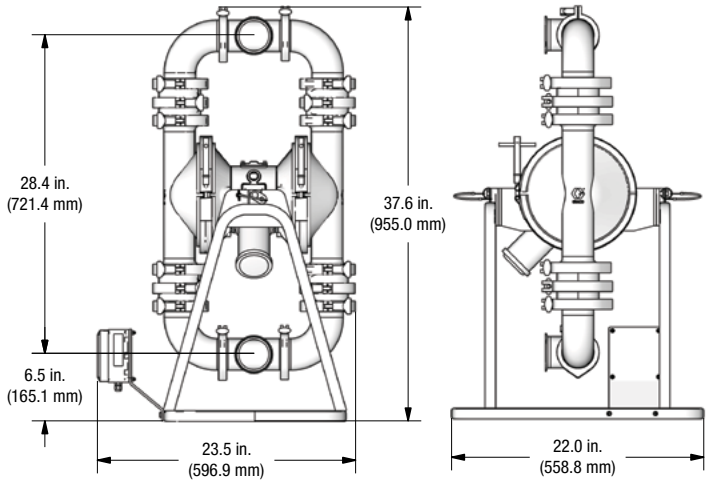
SaniForce 1590 3A

3A Ball Check Valve Pump



SaniForce 3150 3A

3A Ball Check Valve Pump



Ordering Information

Part Number	Type	Manifold ID	Sanitary Connection	Diaphragm
SFP6F1	Flapper	2.9 in (73.7 mm)	3 in x 3 in	Santoprene
SFP7F1	Flapper	2.9 in (73.7 mm)	3 in x 3 in	Buna-N
SFP8F1	Flapper	2.9 in (73.7 mm)	3 in x 3 in	Fluoroelastomer
SFPAF1	Flapper	2.9 in (73.7 mm)	3 in x 3 in	Overmolded EPDM

Accessories

Part Number	Description
253225	Santoprene diaphragm kit
253223	Buna-N diaphragm kit
253222	Fluoroelastomer diaphragm kit
253224	Overmolded EPDM diaphragm kit
15D990	Leak detector kit

Flapper Check Valve

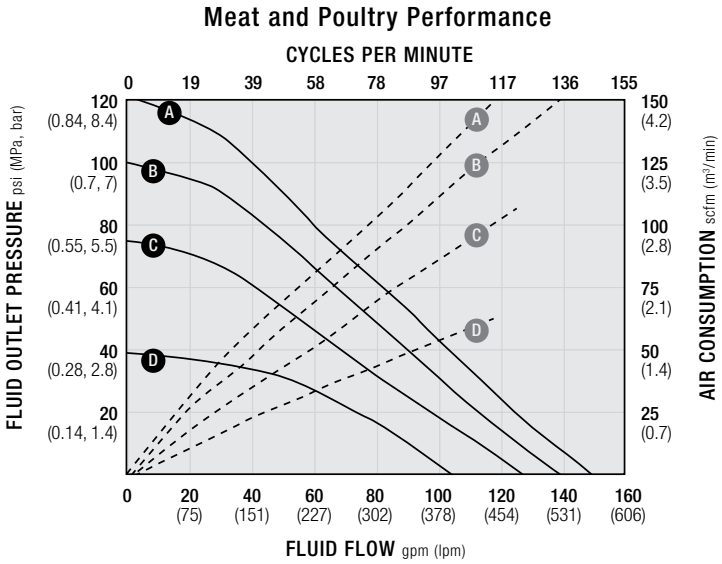
Technical Specifications

	Meat and Poultry
Maximum fluid working pressure	120 psi (8 bar, 0.8 MPa)
Maximum free-flow delivery*	150 gpm (568 lpm)
Maximum suction lift	10 ft (3.0 m) wet
Maximum size pumpable solids	2.5 in (63.5 mm)
Typical sound level at 70 psi air (4.9 bar) air @ 50 cpm	85 dBa
Air pressure operating range	20-120 psi (1.4 to 8.4 bar, 0.14 to 0.84 MPa)
Air inlet size	0.5 in npt(f)
Fluid inlet & outlet size (determined by part number)	Tri-clamp connections
Weight	145 lb (65 kg)
Flyer	338067
Instruction manual	310622

Maximum diaphragm operating temperature	
Santoprene	180ºF (82.2ºC)
Buna-N	180ºF (82.2ºC)
Fluoroelastomer	250ºF (121ºC)
EPDM	275ºF (135ºC)

** Flow rates are with muffler and do not vary based on diaphragm material. Displacement per cycle may vary based on suction condition, discharge head, air pressure and fluid type.*

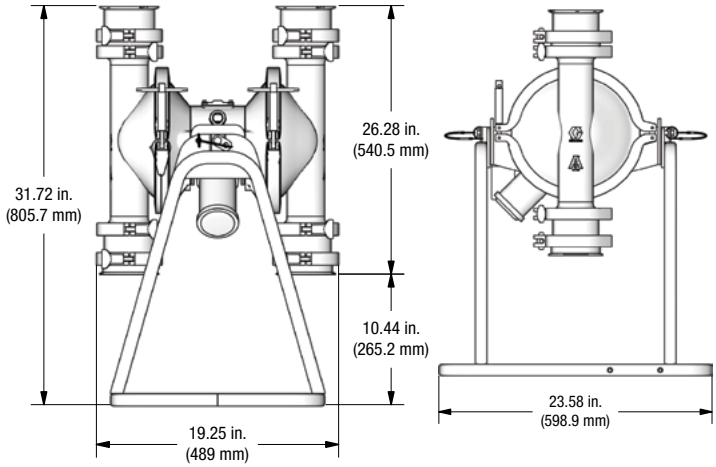
Performance Charts



AIR PRESSURE	LEGEND
(A) = at 120 psi (8.4 bar, 0.84 MPa)	Air Consumption - - - - -
(B) = at 100 psi (7 bar, 0.7 MPa)	Fluid Flow ———
(C) = at 70 psi (4.8 bar, 0.5 MPa)	
(D) = at 40 psi (2.8 bar, 0.3 MPa)	

Dimensions

SaniForce 3150 Meat and Poultry Flapper



SaniForce Piston Pumps
2:1, 6:1, 5:1 and 12:1

Ordering Information

2:1 Piston Pump

Part No.	Pump Type	Pump Length: Inlet to Outlet	Pump Inlet	Packings	Weight: lb (kg)
24N300	Double Ball	Long - 44.5 in (113 cm)	2 in (5.1 cm) OD	UHMWPE, FKM	26 (11.8)
24N344	Double Ball	Long - 44.5 in (113 cm)	2 in (5.1 cm) OD	PTFE, FKM	26 (11.8)
24R046	Double Ball	Standard Drum - 37.5 in (95.2 cm)	2 in (5.1 cm) OD	UHMWPE, FKM	24 (10.9)
24R047	Double Ball	Standard Drum - 37.5 in (95.2 cm)	2 in (5.1 cm) OD	PTFE, FKM	24 (10.9)

6:1 Piston Pump

Part No.	Pump Type	Pump Length: Inlet to Outlet	Pump Inlet	Packings	Weight: lb (kg)
24E840	Double Ball	Drum Length - 36.4 in (92.4 cm)	2.1 in (5.3 cm) OD	Buna, Nylon, Nitrile, & CR	36.9 (16.7)
24G740	Double Ball	Drum Length, Ram Pkg - 36.4 in (92.4 cm)	6.0 in (15.2 cm) Tri-Clamp	Buna, Nylon, Nitrile, & CR	38 (17)
24E839	Double Ball	Drum Length - 36.4 in (92.4 cm)	2.1 in (5.3 cm) OD	PTFE	36.9 (16.7)
24E838	Double Ball	Stubby - 15.1 in (38.3 cm)	2.5 in (6.3 cm) Tri-Clamp	Buna, UHMWPE & CR	28.9 (13.1)
24E837	Double Ball	Stubby - 15.1 in (38.3 cm)	2.5 in (6.3 cm) Tri-Clamp	PTFE	36.9 (16.7)
24E836	Priming Piston	Stubby - 16.0 in (40.6 cm)	2.3 in (5.8 cm) OD	Buna, Nylon, Nitrile & CR	33.8 (16.8)
24G739	Priming Piston	Stubby, Ram Pkg - 16.0 in (40.6 cm)	6.0 in (15.2 cm) Tri-Clamp	Buna, Nylon, Nitrile & CR	35 (16)
24F942	Double Ball	Bin Length - 48.5 in (123.0 cm)	2.1 in (5.3 cm) OD	Buna, Nylon, Nitrile, & CR	39.7 (18)

5:1 Piston Pump

Part No.	Pump Type	Pump Length: Inlet to Outlet	Pump Inlet	Packings	Weight: lb (kg)
24F195	Double Ball	Drum Length - 36.8 in (93.4 cm)	4 in (10.2 cm) OD	Buna, PTFE, UHMWPE & FKM	119 (54.1)
24E833	Double Ball	Stubby - 20.4 in (51.8 cm)	4 in (10.2 cm) OD	Buna, PTFE, UHMWPE & FKM	91.3 (41.4)
24G742	Double Ball	Stubby, Ram Pkg - 20.4 in (51.8 cm)	6 in (15.2 cm) Tri-Clamp	Buna, PTFE, UHMWPE & FKM	95 (43)
24E831	Priming Piston	Drum Length - 25.9 in (65.7 cm)	4 in (10.2 cm) OD	Buna, PTFE, UHMWPE, CR, Nylon & FKM	95.3 (43.2)
24G741	Priming Piston	Drum Length, Ram Pkg - 25.9 in (65.7 cm)	6 in (15.2 cm) Tri-Clamp	Buna, PTFE, UHMWPE, CR, Nylon & FKM	99 (45)
24F196	Double Ball	Stubby with Inlet Elbow - 25.2 in (64.0 cm)	90º Elbow, 2.5 in (6.3 cm) Tri-Clamp	Buna, FKM, PTFE & UHMWPE	93.1 (42.2)
24F197	Double Ball	Stubby - 19.3 in (49.0 cm)	4 in (10.2 cm) Tri-Clamp	Buna, PTFE, Silicone, FKM & UHMWPE	90.6 (41.1)

12:1 Piston Pump

Part No.	Pump Type	Pump Length: Inlet to Outlet	Pump Inlet	Packings	Weight: lb (kg)
24F625	Priming Piston	Stubby, Ram Package - 16.1 in (40.8 m)	6 in (15.2 cm) Tri-Clamp	Acetal, PTFE, Nitrile and UHMWPE	122 (55)
24F626*	Priming Piston	Stubby, Ram Package - 16.1 in (40.8 m)	6 in (15.2 cm) Tri-Clamp	Acetal, PTFE, Nitrile and UHMWPE	122 (55)

*OD = Outside Diameter CR = Polychloroprene *For use with viscous sticky material*

Monark 5:1

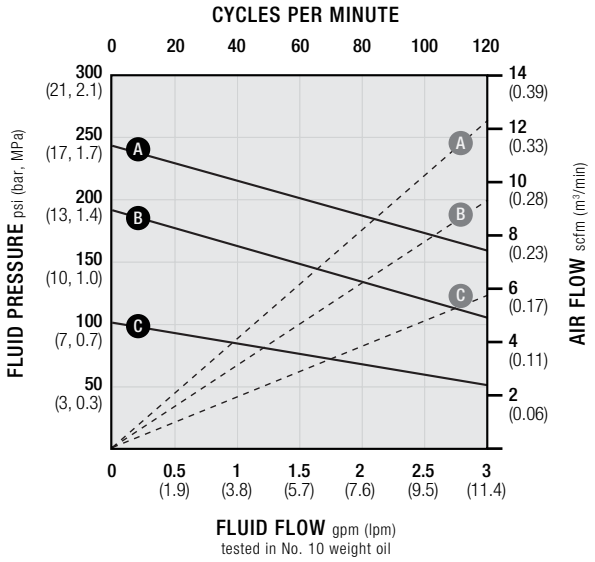
Part No.	Pump Type	Pump Length: Inlet to Outlet	Pump Inlet	Packings	Weight: lb (kg)
207550	Double Ball	Drum Length - 36.7 in (93.3 cm)	2.1 in (5.3 cm) OD	Buna, Neoprene	33 (15)

Technical Specifications

SaniForce	2:1 Piston Pump	6:1 Piston Pump	5:1 Piston Pump	12:1 Piston Pump
Fluid to air pressure ratio	2.5:1	6:1	5:1	12:1
Maximum fluid pressure	250 psi (17 bar)	600 psi (41 bar)	400 psi (28 bar)	1200 psi (83 bar)
Maximum fluid flow at 60 cpm	1.5 gpm (5.7 lpm)	4.0 gpm (15.1 lpm)	14.0 gpm (53 lpm)	8.5 gpm (32 lpm)
Air consumption at 60 cpm	6 cfm at 100 psi (7 bar)	29 cfm at 100 psi (7 bar)	75 cfm at 80 psi (5.5 bar)	116 cfm at 100 psi (7 bar)
Volume per cycle	0.041 gal (0.15 l)	0.067 gal (0.25 l)	0.23 gal (0.87 l)	0.14 gal (0.54 l)
Max. operating temp. (fluid)	180ºF (82ºC)	250ºF (121ºC)	140ºF (60ºC)	160ºF (71ºC)
Max. operating temp. (air motor)	120ºF (48.8ºC)	120ºF (48.8ºC)	120ºF (48.8ºC)	120ºF (48.8ºC)
Max. size pumpable solids	1/8 in (3.2 mm)	1/8 in (3.2 mm)	1/4 in (6.4 mm)	1/4 in (6.4 mm)
Max. air input pressure	100 psi (7 bar, 0.7 MPa)	100 psi (7 bar, 0.7 MPa)	80 psi (5.5 bar, 0.55 MPa)	100 psi (7 bar. 0.7 MPa)
Air inlet size	3/8 npt	1/2 npsm(f)	1/2 npsm(f)	1/2 npsm(f)
Fluid outlet size	1.0 in (2.5 cm) Tri-Clamp	1.5 in (3.8 cm) Tri-Clamp	2.0 in (5.1 cm) Tri-Clamp	2.0 in (5.1 cm) Tri-Clamp
Flyer	338591	338591	338591	338591
Instruction manual	3A2977	3A0733	3A0734	3A0735

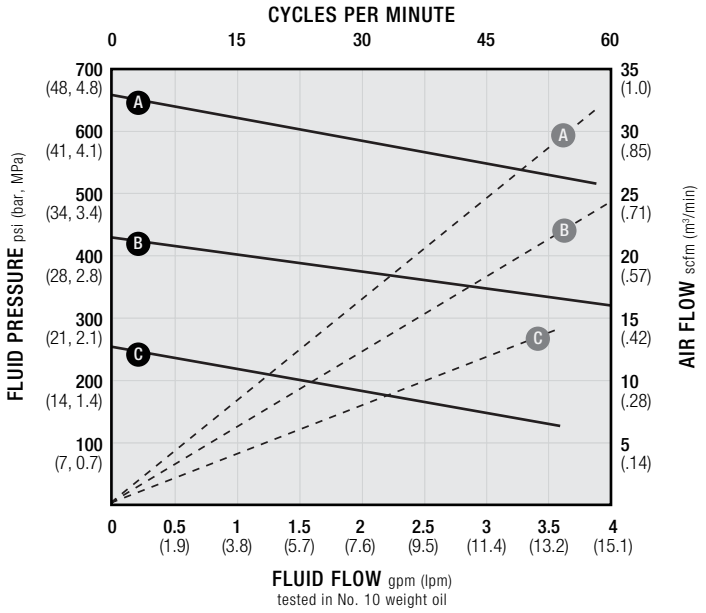
Performance Charts

2:1 Piston Pump Performance



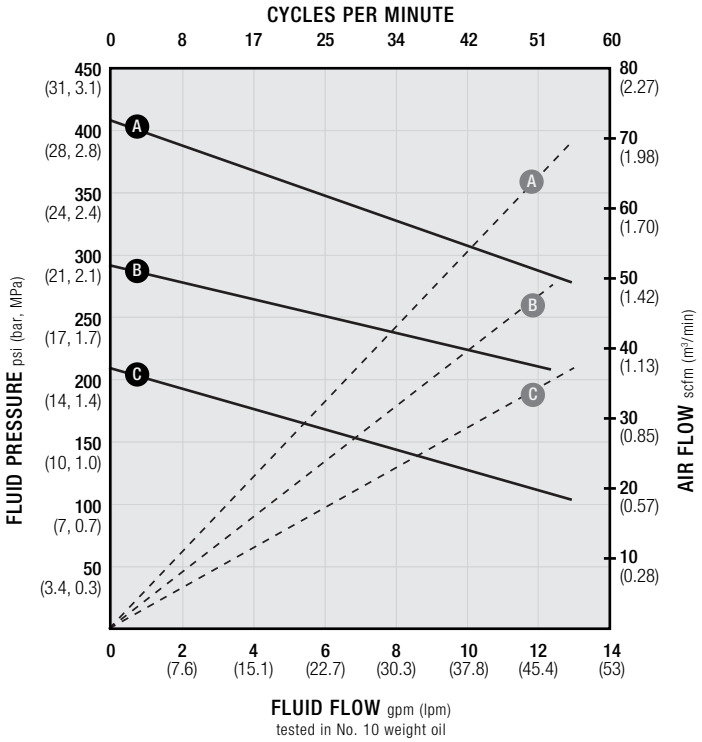
AIR PRESSURE	LEGEND
(A) = at 100 psi (7 bar, 0.7 MPa)	Air Consumption - - - - -
(B) = at 70 psi (4.8 bar, 0.5 MPa)	Fluid Flow ———
(C) = at 40 psi (2.8 bar, 0.3 MPa)	

6:1 Piston Pump Performance



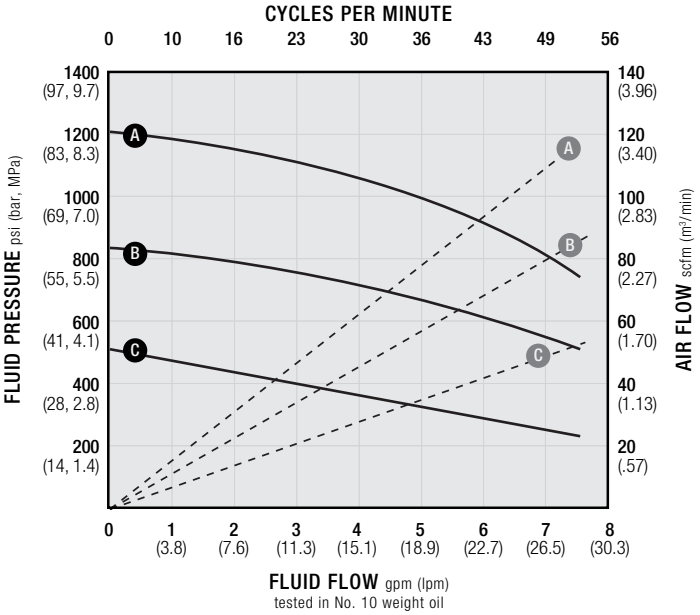
AIR PRESSURE	LEGEND
(A) = at 100 psi (7 bar, 0.7 MPa)	Air Consumption - - - - -
(B) = at 70 psi (4.8 bar, 0.5 MPa)	Fluid Flow ———
(C) = at 40 psi (2.8 bar, 0.3 MPa)	

5:1 Piston Pump Performance



AIR PRESSURE	LEGEND
(A) = at 80 psi (5.5 bar, 0.5 MPa)	Air Consumption - - - - -
(B) = at 60 psi (4.1 bar, 0.4 MPa)	Fluid Flow ———
(C) = at 40 psi (2.8 bar, 0.3 MPa)	

12:1 Piston Pump Performance

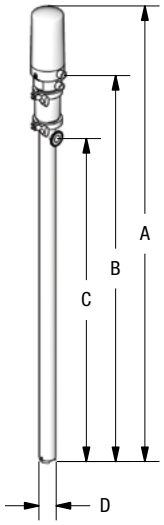


AIR PRESSURE	LEGEND
(A) = at 100 psi (7 bar, 0.7 MPa)	Air Consumption - - - - -
(B) = at 70 psi (4.8 bar, 0.5 MPa)	Fluid Flow ———
(C) = at 40 psi (2.8 bar, 0.3 MPa)	

SaniForce Piston Pumps

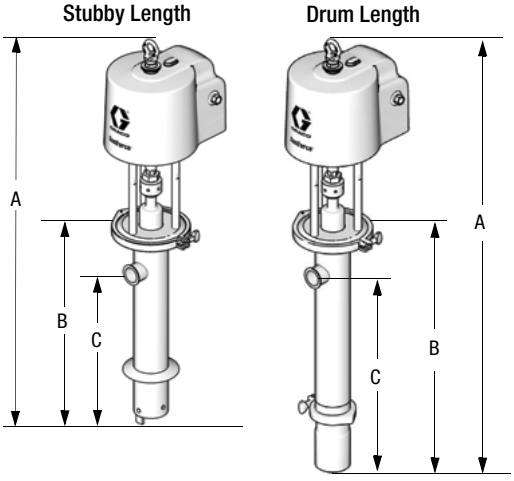
Dimensions

SaniForce 2:1



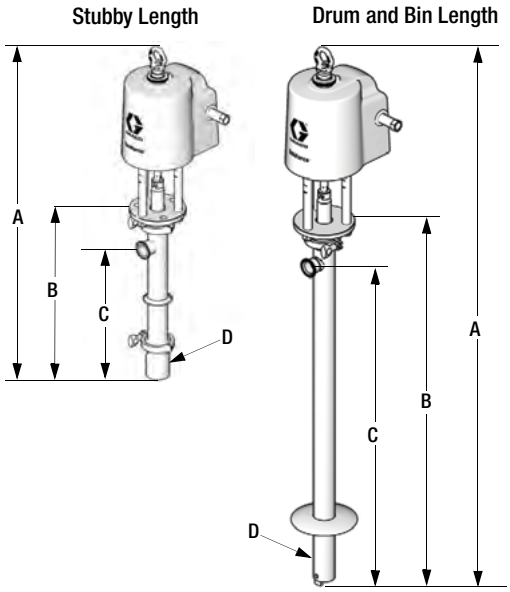
Model	A in (cm)	B in (cm)	C in (cm)	D in (cm)
24N300 and 24N344	61.9 (157.2)	53.7 (136.4)	44.5 (113.0)	1.972 (5.0)
24R046 and 24R047	54.9 (139.4)	46.7 (118.6)	37.5 (95.2)	1.972 (5.0)

SaniForce 5:1



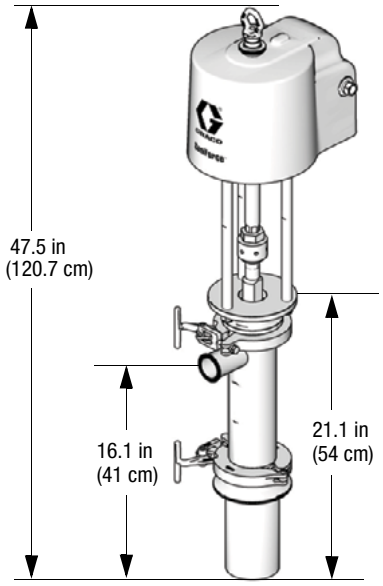
Model	Pump Style	A in (cm)	B in (cm)	C in (cm)
24G742	Double Ball, Stubby	51.5 (131)	25.9 (66)	20.4 (52)
24E833				
24F196	Double Ball, Stubby with inlet	56.3 (143)	30.7 (78)	25.2 (64)
24F197	Double Ball, Bin Length	50.4 (128)	24.8 (63)	19.3 (49)
24G741	Priming Piston, Drum Length	57.0 (145)	31.3 (80)	25.9 (66)
24E831	Priming Piston, Drum Length			
24F195	Double Ball, Drum Length	67.9 (172)	42.3 (107)	36.8 (93)

SaniForce 6:1



Model	Pump Style	A in (cm)	B in (cm)	C in (cm)	D (OD) in (cm)
24E836	Stubby	39.2 (99.5)	19.5 (50)	15.1 (38)	2.1 (5.4)
24E837					
24E838					
24G739	Drum Length	60.5 (153.7)	41 (104)	36.4 (92)	2.1 (5.4)
24G740					
24E839					
24E840					
24F942	Bin Length	73 (185.4)	53.5 (135.9)	48.9 (124.2)	2.1 (5.4)

SaniForce 12:1



Model	Pump Style
24F625	Stubby Ram Package
24F626	

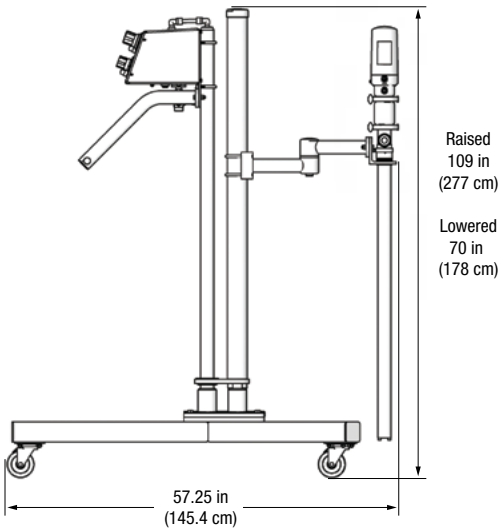
Ordering Information

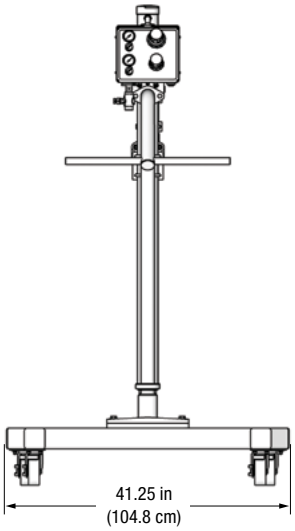
Saniforce Elevators

Model	Cart & Handle	Stationary Base	Pump	Packings	Pump Brackets	Weight
24V310	x		–	–	24V303	305 lb (138 kg)
24V311		x	–	–	24V303	170 lb (77 kg)
24V312	x		–	–	24V307	305 lb (138 kg)
24V313		x	–	–	24V307	170 lb (77 kg)
24V314	x		–	–	24V304	305 lb (138 kg)
24V315		x	–	–	24V304	170 lb (77 kg)
24V316	x		2:1	UHMWPE	24V303	330 lb (150 kg)
24V317	x		2:1	PTFE	24V303	330 lb (150 kg)
24V318		x	2:1	UHMWPE	24V303	195 lb (88 kg)
24V319		x	2:1	PTFE	24V303	195 lb (88 kg)
24V320	x		6:1	Buna-N	24V307	342 lb (155 kg)
24V321	x		6:1	PTFE	24V307	342 lb (155 kg)
24V322		x	6:1	Buna-N	24V307	207 lb (94 kg)
24V323		x	6:1	PTFE	24V307	207 lb (94 kg)
24V324	x		5:1	Varied	24V304	425 lb (193 kg)
24V325		x	5:1	Varied	24V304	290 lb (132 kg)

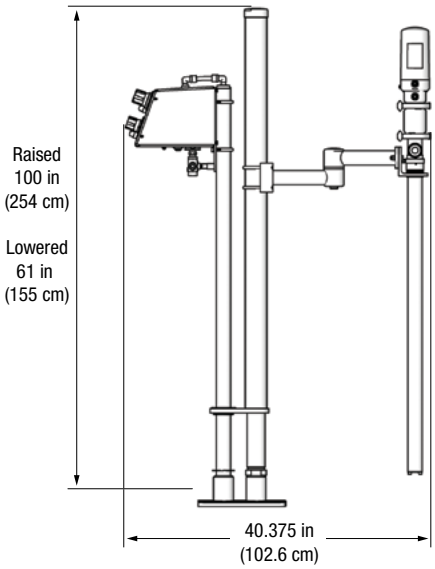
SaniForce Elevators

Mobile Model





Stationary Model



Technical Specifications

SaniForce Elevator	2:1 Piston Pump	6:1 Piston Pump	5:1 Piston Pump
Maximum weight capacity	200 lb (91 kg)	200 lb (91 kg))	200 lb (91 kg)
Maximum ambient temp. (air motor)	120˚F (49˚C)	120˚F (49˚C)	120˚F (49˚C))
Maximum fluid working pressure	250 psi (17 bar, 1.7 MPa)	400 psi (28 bar, 2.8 MPa)	600 psi (41 bar, 4.1 MPa)
Air inlet size	1/2 npt(f)	1/2 npt(f)	1/2 npt(f)
Maximum air inlet pressure	100 psi (7 bar, 0.7 MPa)	100 psi (7 bar, 0.7 MPa)	100 psi (7 bar, 0.7 MPa)
Sound data	See pump manual	See pump manual	See pump manual
Wetted parts	See pump manual	See pump manual	See pump manual
Flyer	338591	338591	338591
Instruction manual	3A2977	3A0733	3A0734

Ordering Information

SaniForce 6:1 Drum Unloader

Part Number	Pump Number	Pump Type	Ram Material	Ram Plate No.	Inflatable Seal No.	Control Type	Weight lb (kg)
24D776	24G739	Priming Piston	SST	16G240	16G242	Exposed	353 (160)
24D780	24G739	Priming Piston	CS*	16G240	16G242	Exposed	372 (169)
24D782	24G739	Priming Piston	SST	16G240	16G242	Enclosed SST	367 (166)
24D788	24G740	Double Ball	SST	16G240	16G242	Exposed	356 (161)
24D792	24G740	Double Ball	CS*	16G240	16G242	Exposed	375 (170)
24D794	24G740	Double Ball	SST	16G240	16G242	Enclosed SST	370 (168)

SaniForce 5:1 Drum Unloader

Part Number	Pump Number	Pump Type	Ram Material	Ram Plate No.	Inflatable Seal No.	Control Type	Weight lb (kg)
24D708	24G741	Priming Piston	SST	16G240	16G242	Exposed	413 (187)
24D712	24G741	Priming Piston	CS*	16G240	16G242	Exposed	433 (196)
24D714	24G741	Priming Piston	SST	16G240	16G242	Enclosed SST	428 (194)
24D720	24G742	Double Ball	SST	16G240	16G242	Exposed	417 (189)
24D724	24G742	Double Ball	CS*	16G240	16G242	Exposed	437 (198)
24D726	24G742	Double Ball	SST	16G240	16G242	Enclosed SST	432 (196)

SaniForce 12:1 Drum Unloader

Part Number	Pump Number	Pump Type	Ram Material	Ram Plate No.	Inflatable Seal No.	Control Type	Weight lb (kg)
24D647	24F625	Priming Piston	SST	16G240	16G242	Exposed	440 (200)
24D651	24F625	Priming Piston	CS*	16G240	16G242	Exposed	459 (208)
24D653	24F625	Priming Piston	SST	16G240	16G242	Enclosed SST	454 (206)
24F188**	24F626	Priming Piston	SST	16G240	16G242	Exposed	440 (200)
24F189**	24F626	Priming Piston	CS*	16G240	16G242	Exposed	459 (208)
24F190**	24F626	Priming Piston	SST	16G240	16G242	Enclosed SST	454 (206)
24U568**	24F626	Priming Piston	SST	16G240	16G242	Enclosed SST	460 (209)
24F188**	24F626	Priming Piston	CS*	16G240	16G242	Exposed	440 (200)
24F189**	24F626	Priming Piston	SST	16G240	16G242	Enclosed SST	459 (208)
24F190**†	24F626	Priming Piston	SST	17B191	16G242	Exposed	454 (206)

**CS = Painted carbon steel **For use with sticky material † = Conical shaped plate*

Technical Specifications

Drum Unloaders	6:1 Double Ball Pump	6:1 Priming Piston	5:1 Double Ball Pump	5:1 Priming Piston	12:1 Priming Piston	3150 High Sanitation	2150 High Sanitation
Max fluid pressure	600 psi (41 bar, 4.1 MPa)	600 psi (41 bar, 4.1 MPa)	400 psi (28 bar, 2.8 MPa)	400 psi (28 bar, 2.8 MPa)	1200 psi (83 bar, 8.3 MPa)	120 psi (8.3 bar, 0.83 MPa)	120 psi (8.3 bar, 0.83 MPa)
Max Flow at 60 cpm	4.0 gpm (15.1 lpm)	4.0 gpm (15.1 lpm)	14 gpm (53 lpm)	14 gpm (53 lpm)	8.5 gpm (32 lpm)	60 gpm (227 lpm)	60 gpm (227 lpm)
Max Flow at 100 cpm	–	–	–	–	–	100 gpm (378 lpm)	100 gpm (378 lpm)
Viscosity	Up to 75,000 cps	Up to 125,000 cps	Up to 200,000 cps	Up to 750,000 cps	Up to 1,000,000 cps	Up to 100,000 cps	Up to 100,000 cps
Max inlet air pressure	100 psi (7 bar, 0.7 MPa)	100 psi (7 bar, 0.7 MPa)	80 psi (5.5 bar, 0.6 MPa)	80 psi (5.5 bar, 0.6 MPa)	100 psi (7 bar, 0.7 MPa)	120 psi (8.3 bar, 0.8 MPa)	120 psi (8.3 bar, 0.8 MPa)
Air inlet size (enclosed, exposed controls)	1/2 npt(f), 3/4 npt(f)	1/2 npt(f), 3/4 npt(f)	1/2 npt(f), 3/4 npt(f)	1/2 npt(f), 3/4 npt(f)	1/2 npt(f), 3/4 npt(f)	1/2 npt(f), 3/4 npt(f)	1/2 npt(f), 3/4 npt(f)
Evacuation efficiency	Up to 99%	Up to 99%	Up to 99%	Up to 99%	Up to 99%	Up to 99%	Up to 99%
Flyer	338590	338590	338590	338590	338590	338590	338590
Instruction manual	3A0591	3A0591	3A0591	3A0591	3A0591	3A0591	3A0591

** Flow rates based on full displacement of lower and S.G. = 1*

SaniForce Drum Unloaders

Ordering Information

SaniForce 3150 HS Drum Unloader

Part Number	Pump Number	Pump Type	Ram Material	Ram Plate No.	Inflatable Seal No.	Control Type	Weight lb (kg)	Diaphragm Material	Ball Material
24J364	24J389	Diaphragm	SST	16D301	16E144	Exposed	428 (194)	PTFE/EPDM	PTFE
24J365	24J389	Diaphragm	CS	16D301	16E144	Exposed	443 (201)	PTFE/EPDM	PTFE
24J366	24J389	Diaphragm	SST	16D301	16E144	Exposed	428 (194)	PTFE/EPDM	PTFE
24D922	24C124	Ball	SST	16G241	16G242	Exposed	428 (194)	Overmolded EPDM, 3A	PTFE
24D926	24C124	Ball	CS*	16G241	16G242	Exposed	443 (201)	Overmolded EPDM, 3A	PTFE
24D928	24C124	Ball	SST	16G241	16G242	Enclosed SST	442 (200)	Overmolded EPDM, 3A	PTFE
24D932	248273	Ball	CS*	16G241	16G242	Exposed	443 (201)	Santoprene	Santoprene
24D936	248273	Ball	SST	16G241	16G242	Enclosed SST	442 (200)	Santoprene	Santoprene
24D940	248273	Ball	SST	16G241	16G242	Exposed	428 (194)	Santoprene	Santoprene
24D944	248274	Flapper	SST	16G241	16G242	Exposed	428 (194)	Santoprene	–
24D948	248274	Flapper	CS*	16G241	16G242	Exposed	443 (201)	Santoprene	–
24D952	248274	Flapper	SST	16G241	16G242	Enclosed SST	442 (200)	Santoprene	–

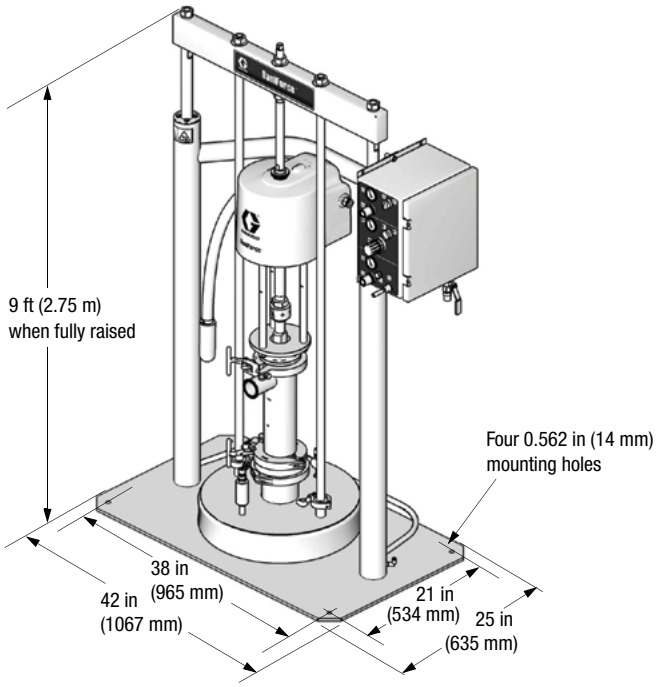
SaniForce 2150 Drum Unloader

Part Number	Pump Number	Pump Type	Ram Material	Ram Plate No.	Inflatable Seal No.	Control Type	Weight lb (kg)	Diaphragm Material	Ball Material
24G542	24G743	Ball	SST	16G241	16G242	Exposed	450 (204)	Overmolded PTFE	PTFE
24F191	24G743	Ball	CS*	16G241	16G242	Exposed	464 (210)	Overmolded PTFE	PTFE
24G543	24G743	Ball	SST	16G241	16G242	Enclosed SST	464 (210)	Overmolded PTFE	PTFE
24F192	24G744	Ball	SST	16G241	16G242	Exposed	450 (204)	Santoprene	Weighted polychloroprene
24F193	24G744	Ball	CS*	16G241	16G242	Exposed	464 (210)	Santoprene	Weighted polychloroprene
24F194	24G744	Ball	SST	16G241	16G242	Enclosed SST	464 (210)	Santoprene	Weighted polychloroprene

**CS = Painted carbon steel.*

Dimensions

SaniForce Drum Unloader



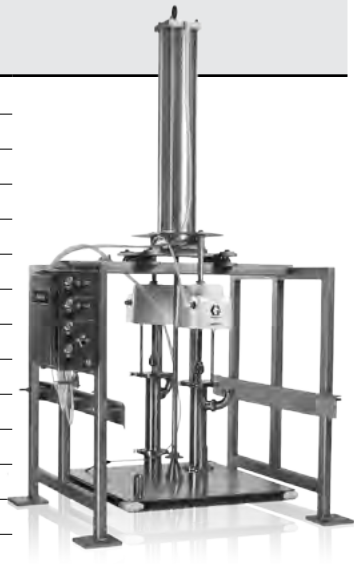
SaniForce 3150 HS
Drum Unloader

SaniForce 2150
Drum Unloader

Ordering Information

SaniForce BES

BES Part Number	Max. Working Fluid Pressure per pump psi (bar, MPa)	Pump Type	Pump Quantity	Pump Description	Control Type	BIN Manuf
BESAAC	400 (28, 2.8)	Double Ball	2	SaniForce 5:1	Manual	Buckhorn Caliber 315
BESA4C	400 (28, 2.8)	Double Ball	2	SaniForce 5:1	Manual	Pallecon
BESA7A	400 (28, 2.8)	Double Ball	2	SaniForce 5:1	Electronic	Plywood
BESA7C	400 (28, 2.8)	Double Ball	2	SaniForce 5:1	Manual	Plywood
BESA7F	400 (28, 2.8)	Double Ball	2	SaniForce 5:1	Electronic	Plywood
BESB7B	400 (28, 2.8)	Double Ball	4	SaniForce 5:1	Electronic	Plywood
BESB7D	400 (28, 2.8)	Double Ball	4	SaniForce 5:1	Manual	Plywood
BESEAC	1200 (83, 8.3)	Priming Piston	2	SaniForce 12:1	Manual	Buckhorn Caliber 315
BESE1A	1200 (83, 8.3)	Priming Piston	2	SaniForce 12:1	Electronic	Arena
BESE1C	1200 (83, 8.3)	Priming Piston	2	SaniForce 12:1	Manual	Arena
BESE5C	1200 (83, 8.3)	Priming Piston	2	SaniForce 12:1	Manual	Pallecon
BESE7C	1200 (83, 8.3)	Priming Piston	2	SaniForce 12:1	Manual	Plywood
BESF6B	1200 (83, 8.3)	Priming Piston	4	SaniForce 12:1	Electronic	Arena
BESF6D	1200 (83, 8.3)	Priming Piston	4	SaniForce 12:1	Manual	Arena
BESF7D	1200 (83, 8.3)	Priming Piston	4	SaniForce 12:1	Manual	Plywood
BESF9B	1200 (83, 8.3)	Priming Piston	4	SaniForce 12:1	Electronic	TNT
BESF9D	1200 (83, 8.3)	Priming Piston	4	SaniForce 12:1	Manual	TNT



Note: Systems can be special ordered for bin types other than plywood, arena and pallecon. Contact your sales rep for additional information.

Technical Specifications

SaniForce BES

Part No	BESAxx	BESBxx	BESDxx	BESExx	BESFxx
Max. working fluid pressure	400 psi (28 bar, 2.8 MPa)		600 psi (41 bar, 4.1 MPa)	1200 psi (83 bar, 8.3 MPa)	1200 psi (83 bar, 8.3 MPa)
Compressed air requirement	80-100 psi (5.5-7 bar, 0.55-0.7 MPa)		80-100 psi (5.5-7 bar, 0.55-0.7 MPa)	80-100 psi (5.5-7 bar, 0.55-0.7 MPa)	80-100 psi (5.5-7 bar, 0.55-0.7 MPa)
Pneumatic control panel specifications					
Max. inlet air pressure	80 psi (5.5 bar, 0.55 MPa)		100 psi (7 bar, 0.7 MPa)	100 psi (7 bar, 0.7 MPa)	100 psi (7 bar, 0.7 MPa)
Air inlet size	3/4 in npt(f)		3/4 in npt(f)	3/4 in npt(f)	3/4 in npt(f)
Air inlet pump	1/2 in npt(f)		1/2 in npt(f)	1/2 in npt(f)	1/2 in npt(f)
Fluid displacement (each pump)	0.23 gal/cycle (0.87 l/cycle)		0.075 gal/cycle (0.28 l/cycle	0.14 gal/cycle (0.52 l/cycle)	0.14 gal/cycle (0.52 l/cycle)
Max. flow @ 60 cpm*	28 gpm (106 lpm)	56 gpm (212 lpm)	8 pgm (30 lpm)	17 gpm (64 lpm)	34 gpm (128 lpm)
Pressure ratio	5:1		6:1	12:1	12:1
Air consumption (each pump) at 40 psi (2.8 bar, 0.28 MPa)	~2.95 scfm per gpm		~3.75 scfm per gpm	~7.5 scfm per gpm	~7.5 scfm per gpm
Pump outlet	2 in tri-clamp		2 in tri-clamp	2 in tri-clamp	2 in tri-clamp
Communication	RS232 Serial		RS232 Serial	RS232 Serial	RS232 Serial
Electrical requirements	110 VAC (60 Hz), 15A		110 VAC (60 Hz), 15A	110 VAC (60 Hz), 15A	110 VAC (60 Hz), 15A
Overall dimensions in (m)	69 W x 60 D x 118.8 H (1.72 W x 1.52 D x 3.0 H)		69 W x 60 D x 118.8 H (1.72 W x 1.52 D x 3.0 H)	69 W x 60 D x 118.8 H (1.72 W x 1.52 D x 3.0 H)	69 W x 60 D x 118.8 H (1.72 W x 1.52 D x 3.0 H)
Flyer	338589		338589	338589	338589
Instruction manual	311163		311163	311163	311163

** Flow rates based on full displacement of lower and S.G. = 1*

Note: Graco's BES packages are available for a variety of manufacturers' bins and custom systems can be built upon request. Contact Graco at 1-800-543-0339 for more information.

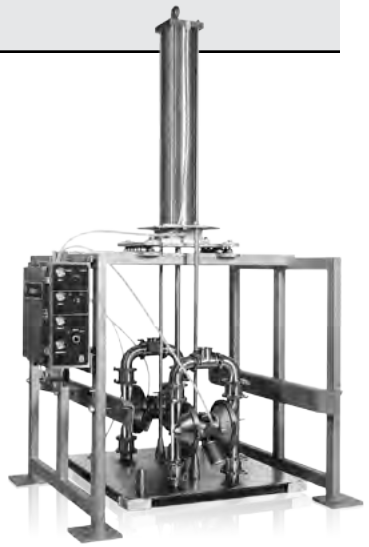
SaniForce Bin Evacuation Systems

Ordering Information

SaniForce 3150 BES

Part Number	Type	Bin Manuf.	Control Type	Outlet Size	Diaphragm/Ball Material**
BES3P3	Ball	Plywood	Manual	3 in (76 mm)	Santoprene/ PTFE
BES3P1	Ball	Plywood	Electronic	3 in (76 mm)	Santoprene/ PTFE
BES4P3	Flapper	Plywood	Manual	3 in (76 mm)	Santoprene/ N/A
BES8B3	Ball	Pallecon	Manual	3 in (76 mm)	Overmolded EPDM, 3A
BES3A1	Ball	Arena	Electronic	3 in (76 mm)	Santoprene/ PTFE
BES4A1	Flapper	Arena	Electronic	3 in (76 mm)	Santoprene/ N/A

Note: Contact marketing for ordering information on non-plywood bins.
***3A Approved EPDM diaphragm is available for heavy duty applications.*



Technical Specifications

SaniForce 3150 BES

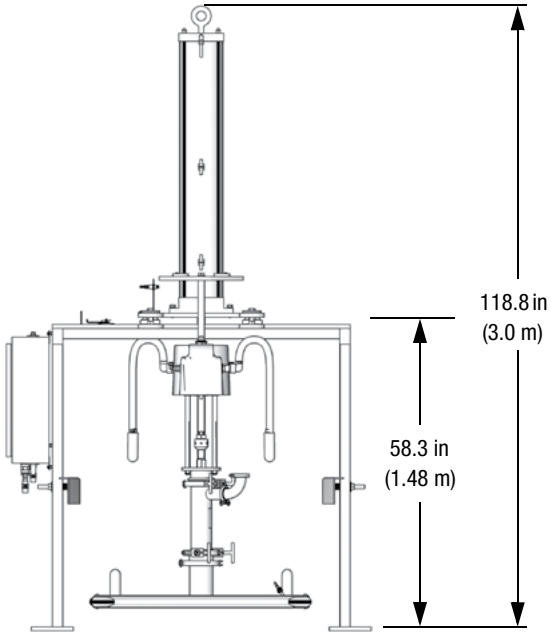
Part No	BES3xx	BES4xx
Max. working fluid pressure	120 psi (8.4 bar, 0.84 MPa)	
Compressed air requirement	80-120 psi (5.5-8.4 bar, 0.55-0.84 MPa)	
Pneumatic control panel specifications		
Max. inlet air pressure	120 psi (8.4 bar, 0.84 MPa)	
Air inlet size	3/4 in npt(f)	
Air inlet pump	1/2 in npt(f)	
Fluid displacement (each pump)	1.03 gal/cycle (3.89 l/cycle)	
Max. flow @ 145 cpm*	300 gpm (1,135 lpm)	
Pressure ratio	1:1	
Air consumption (each pump) at 70 psi (0.48 MPa, 4.8 bar)	~0.8 scfm per gpm	
Pump outlet	3 in tri-clamp	
Max. suction lift	18 ft (5.5 m) wet	10 ft (3.0 m) wet
Max. diaphragm operating temperature (Santoprene, 3A Approved EPDM)	180ºF (82.2ºC), 275ºF (135ºC)	
Typical sound level at 70 psi (4.9 bar) air @ 50 cpm	85 dBa	
Weight	3,000 lb (1,360 kg)	
Flyer	338589	
Instruction manual	311163	

** Flow rates are with muffler and slightly vary based on diaphragm material. Displacement per cycle may vary based on suction condition, discharge head, air pressure and fluid type.*

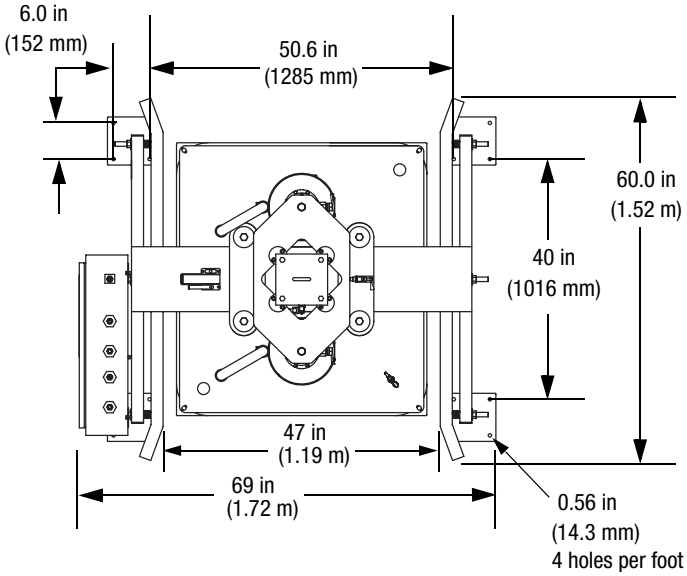
Dimensions

SaniForce BES

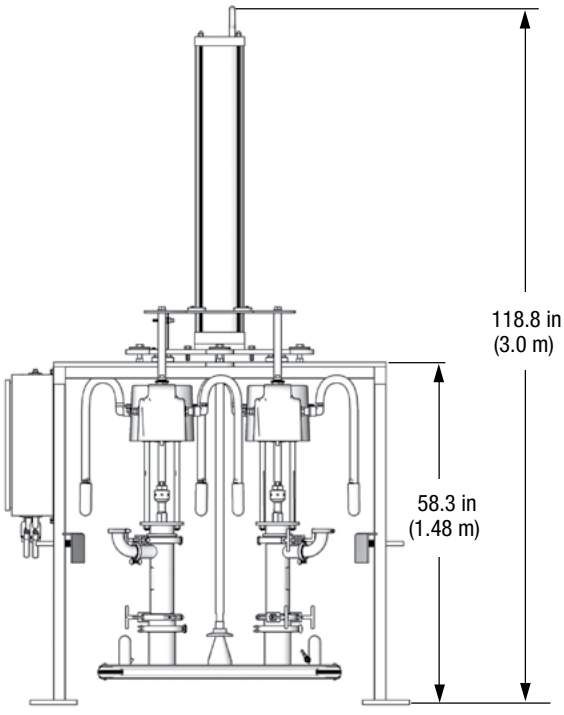
Front View



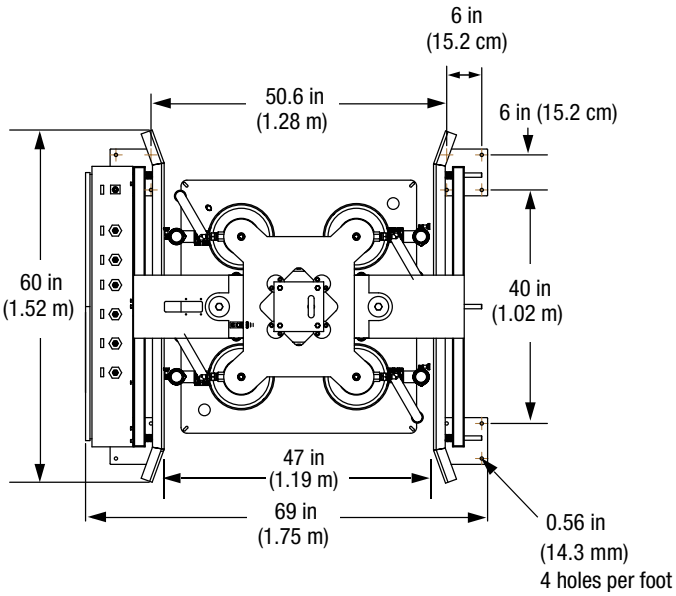
Top View



Front View



Top View



Hydra-Clean Pressure Washers
High Sanitation Cleaning Packages

Ordering Information

Package Order Number.	247549 or 247550	247551 or 247552	247553 or 247554	258664 or 258665	206515
Package Instruction Manual	312585	312585	312585	312585	306817
Air Motor Part Number	N34DN0	N65DN0	N65DN0	N65DN0	207352
Air Motor Manual	311238	311238	311238	311238	306982
Pump Lower Part number	247599	241648	687055	24B923	224344
Pump Manual	312745	311825	311825	311827	306817
Wetted Parts	SST/PTFE/ CF-PTFE	SST/CF-PTFE/ UHMWPE	SST/CF-PTFE/ UHMWPE	SST/CF-PTFE/ UHMWPE	SST/CR/ UHMWPE
Pump Std. Repair Kit	247881	222880	See Manual	24C162	224402
Optional PTFE Repair Kit	N/A	222876	222846	237179	224889
Std. Discharge Hose (3/8 x 50 ft) 4500 psi (310 bar) Comes with M & F QD's	247878	247878	247878	247878	205753
Std. Gun/Wand Assy	247879	247879	247879	247879	237485/207299
Std. 60 Mesh Inlet Strainer	15T284	15T284	15T284	15T284	206300
Flyer	338026	338026	338026	338026	338026

Stainless Steel Tips

Part Number	Orifice Size	Fan Angle	247549 or 247550	247551 or 247552	247553 or 247554	248664 or 248665	206515
805538	0.030 in (0.8 mm)	40º	1165 psi (80 bar) 0.6 gpm (2.3 lpm)	2120 psi (146 bar) 0.8 gpm (3.0 lpm)	2829 psi (195 bar) 1.0 gpm (3.8 lpm)	3995 psi (275 bar) 1.2 gpm (4.5 lpm)	N/A
805549	0.045 in (1.1 mm)	25º	1137 psi (78 bar) 1.7 gpm (6.4 lpm)	2020 psi (139 bar) 1.8 gpm (6.8 lpm)	2553 psi (176 bar) 2.0 gpm (7.6 lpm)	3515 psi (242 bar) 3.3 gpm (12.5 lpm)	N/A
805566	0.065 in (1.7 mm)	40º	1071 psi (74 bar) 3.6 gpm (13.6 lpm)	1803 psi (124 bar) 3.7 gpm (14.0 lpm)	2141 psi (148 bar) 4.0 gpm (15.1 lpm)	2924 psi (201 bar) 4.1 gpm (15.2 lpm)	N/A
805575	0.080 in (2.0 mm)	0º	1018 psi (70 bar) 4.0 gpm (15.1 lpm)	1634 psi (113 bar) 4.8 gpm (18.1 lpm)	1811 psi (125 bar) 4.9 gpm (18.5 lpm)	2499 psi (172 bar) 5.1 gpm (19.3 lpm)	N/A
103921	0.065 in (1.6 mm)	40º	N/A	N/A	N/A	N/A	750 psi (52 bar) 2.6 gpm (9.8 lpm)

Pressure and flow rates are tested with air pressure of 100 psi (7 bar).
Other orifice sizes and fan widths available from Graco. Contact a sales representative for more information.

Hydra-Clean Wall-Mount

Hydra-Clean Cart-Mount

Hydra-Clean Drum-Mount

Accessories

Part Number	Description
Guns and Wands	
15T282	Optional replacement SST spray gun
15T279	32 inch SST wand
15T280	10 inch SST wand
247880	Gun SST quick disconnect connections

Part Number	Description
Other	
191635	10 mesh inlet strainer with 1 in npt(f) connection
15T272	Quick Coupling For adding a second hose with gun to the outlet of the pump

Technical Specifications

Part Number	Pump Package	Max. Working Pressure psi (bar, MPa)	Max. Air Input Pressure psi (bar, MPa)	Fluid Flow at 60 cpm gpm (lpm)	Vol. per Cycle oz (cc)	Air Inlet Size	Fluid Inlet Size	Fluid Outlet Size*
247549	12:1 Cart Mount	1250 (86, 8.6)	100 (7, 0.7)	8.7 (33.0)	18.6 (550)	3/4 npt(f)	1 in	3/8 in
247550	12:1 Wall Mount	1250 (86, 8.6)	100 (7, 0.7)	8.7 (33.0)	18.6 (550)	3/4 npt(f)	1 in	3/8 in
247551	23:1 Cart Mount	2275 (157, 15.7)	100 (7, 0.7)	9.2 (34.7)	19.6 (580)	3/4 npt(f)	1 in	3/8 in
247552	23:1 Wall Mount	2275 (157, 15.7)	100 (7, 0.7)	9.2 (34.7)	19.6 (580)	3/4 npt(f)	1 in	3/8 in
247553	30:1 Cart Mount	3065 (211, 21.1)	100 (7, 0.7)	6.8 (25.9)	14.5 (430)	3/4 npt(f)	1 in	3/8 in
247554	30:1 Wall Mount	3065 (211, 21.1)	100 (7, 0.7)	6.8 (25.9)	14.5 (430)	3/4 npt(f)	1 in	3/8 in
258664	40:1 Cart Mount	4000 (275, 27.5)	100 (7, 0.7)	4.6 (17.4)	9.8 (290)	3/4 npt(f)	1 in	3/8 in
258665	40:1 Wall Mount	4000 (275, 27.5)	100 (7, 0.7)	4.6 (17.4)	9.8 (290)	3/4 npt(f)	1 in	3/8 in
206515	10:1 Drum Mount	1800 (125, 12.5)	180 (12.5, 1.2)	3.0 (11.4)	6.4 (189)	1/2 npt(f)	1/2 in	3/4 in

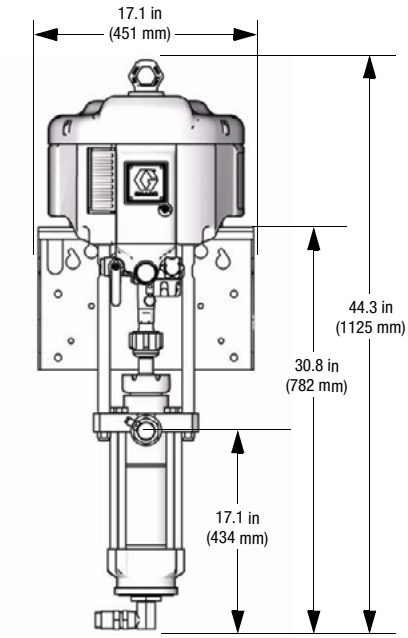
**Includes two outlet ports per unit. Part number 206515 has only one outlet port.*

Hydra-Clean Pressure Washers

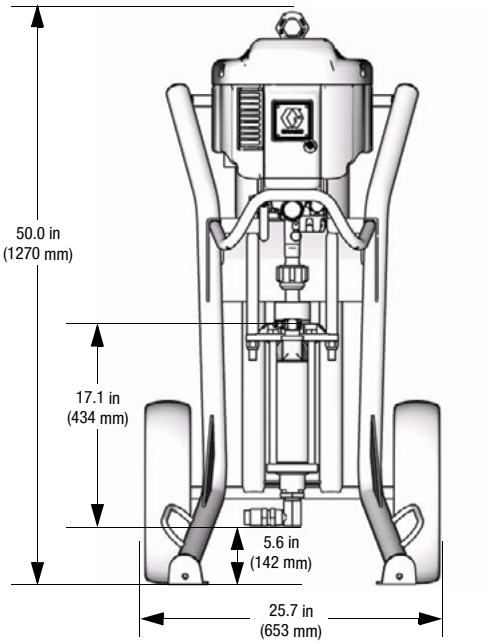
Dimensions

Hydra-Clean

Wall Mount Package 247550



Cart Mount Package 247549



Refer to manual 312585 for additional package dimensions

Ordering Information

High Sanitation and Industrial PTFE Overmolded Diaphragm Repair Kits*

Part No.	Description
253626	For 1 inch pump size, diaphragm repair kit
253627	For 1.5 inch pump size, diaphragm repair kit
253628	For 2 inch pump size, diaphragm repair kit

**To replace PTFE overmolded diaphragms*

High Sanitation and Industrial PTFE Overmolded Diaphragm Upgrade Kits*

Part No.	Description
289224	Upgrade kit for 1 inch pump
289225	Upgrade kit for 1.5 inch pump
289226	Upgrade kit for 2 inch pump

**Includes new airside diaphragm plate to upgrade current pump to PTFE overmolded diaphragms.*

SaniForce 515 Drum Mount Kit

Part No.	Description
262828	Kit, Drum mount SaniForce 515
110954	SaniForce 515 PTFE Seal Kit

SaniForce Drum Unloader Inflatable Seals

Part No.	Description
16G242	FDA Polychloroprene (CR)
16M208	FDA EPDM

High Sanitation and Industrial Upgrade Kits*

Part No.	Description
24N321	Upgrade kit for 0.5 and 0.75 inch pump
289224	Upgrade kit for 1 inch pump (Husky 1040)
24B626	Upgrade kit for 1 inch pump (Husky 1050)
289225	Upgrade kit for 1.5 inch pump
289226	Upgrade kit for 2 inch pump

**Includes new airside diaphragm plate for replacement of standard bolt-through diaphragm.*

3A High Sanitation Overmolded EPDM Diaphragm Kit

Part No.	Description
255058	For 1.5 inch pump size, diaphragm repair kit
253224	For 2 inch pump size, diaphragm repair kit

SaniForce 1040, 1590 & 2150 Pump Repair Kits

Part No.	Description
FK1113	For 1 inch pump size, with PTFE o-rings
FK1213	For 1 inch pump size, with EPDM o-rings
FK2113	For 1.5 inch pump size, with PTFE o-rings
FK2213	For 1.5 inch pump size, with EPDM o-rings
FK3113	For 2 inch pump size, with PTFE o-rings
FK3213	For 2 inch pump size, with EPDM o-rings

SaniForce 5:1 Piston Pump Repair Kits

Part No.	Description
24W029	Packing kit with PTFE for high temperature fluids
17B449	PTFE seal only for high temperature fluids

Technical Specifications

	Overmolded Diaphragms
Material/Construction on wetted side	FDA-Compliant PTFE
Material/Construction on air side	FDA-Compliant EPDM
Temperature range	14ºF to 180ºF (-10ºC to 82ºC)
Safety	Complies to FDA21CFR 177.1550 (PTFE) and FDA21CFR 177.2600 (EPDM)

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale by an authorized Graco distributor to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance or structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

FOR GRACO CANADA CUSTOMERS

The Parties acknowledge that they have required that the present document, as well as all documents, notices and legal proceedings entered into, given or instituted pursuant hereto or relating directly or indirectly hereto, be drawn up in English. Les parties reconnaissent avoir convenu que la rédaction du présente document sera en Anglais, ainsi que tous documents, avis et procédures judiciaires exécutés, donnés ou intentés à la suite de ou en rapport, directement ou indirectement, avec les procedures concernées.

Equipment Misuse Hazard

General Misuse: Any misuse of Graco equipment or accessories, such as over-pressurizing, modifying parts, using incompatible chemicals and fluids, or using worn or damaged parts, can cause them to rupture. Misuse of equipment can result in fluid injection, splashing in the eyes or on the skin, or other serious bodily injury, or fire, explosion or property damage. NEVER alter or modify any part of Graco equipment; doing so could cause the product to malfunction. CHECK all equipment regularly and repair or replace worn or damaged parts immediately. Always wear protective eye wear, gloves, clothing and respirator as recommended by fluid and solvent manufacturers.

System Pressure: Be sure that all equipment and accessories used are rated to withstand the applicable MAXIMUM WORKING PRESSURE. DO NOT exceed the maximum working pressure of any component or accessory used in a system.

Fluid and Solvent Compatibility: All chemicals used in a Graco sprayer must be compatible with wetted parts. Consult your chemical supplier to ensure compatibility. Do not use 1:1:1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents in this equipment, which contains aluminum and/or zinc parts. Such use could result in a serious chemical reaction, with the possibility of explosion, which could cause death, serious bodily injury and/or substantial property damage.

ABOUT GRACO

PROVEN QUALITY. LEADING TECHNOLOGY.

Founded in 1926, Graco is a world leader in fluid handling systems and components. Graco products move, measure, control, dispense and apply a wide range of fluids and viscous materials used in vehicle lubrication, commercial and industrial settings.

The company's success is based on its unwavering commitment to technical excellence, world-class manufacturing and unparalleled customer service. Working closely with qualified distributors, Graco offers systems, products and technology that set the quality standard in a wide range of fluid handling solutions. Graco provides equipment for spray finishing, protective coating, paint circulation, lubrication, and dispensing sealants and adhesives, along with power application equipment for the contractor industry. Graco's ongoing investment in fluid management and control will continue to provide innovative solutions to a diverse global market.

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